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THE

EDINBURGH MEDICAL AND SURGICAL JOURNAL:

EXHIBITING

A CONCISE VIEW

OF THE

LATEST AND MOST IMPORTANT DISCOVERIES

IN

MEDICINE, SURGERY, AND PHARMACY.

VOLUME THIRTY-SIXTH.

1831.

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THE

EDINBURGH
MEDICAL AND SURGICAL JOURNAL,

No. CIX.

CONTENTS.

PART I.—ORIGINAL COMMUNICATIONS.

		PAGE
ART. I.	Seventh Report of the Edinburgh Surgical Hospital, from February to August 1831. By JAMES SYME, Esq.	234
II.	On the Congenital Malformations of the Heart. By JOHN PAGET, M. D.	203
III.	Case of Axillary Aneurism cured by tying the Subclavian Artery. By Mr WILLIAM FERGUSSON,	309
IV.	On Diseased States of the Kidney connected during Life with Albuminous Urine; illustrated by Cases. Part I. By JAMES CRAUFURD GREGORY, M. D.	315
V.	Case of Imperforate Anus where the Child was saved by an opening made into the Bladder. By Mr WILLIAM FERGUSSON,	363
VI.	On the Preparation of the Hydriodate of Potash. By WILLIAM GREGORY, M. D.	368
VII.	Instructions which were issued to the Army by the Medical Board with the sanction of the Right Honourable Major-General Sir Henry Hardinge, G. C. B., when he was Secretary at War,	370
VIII.	Experiments on the Reproduction of Bone. By JOHN MURRAY, M. D.,	377
IX.	Description of an Improved Method of inflating the Lungs in Cases of Suspended Animation. By James Elliot, Esq. Surgeon, Dysart,	382
X.	On a variety of Uterine Hemorrhagy not hitherto described. By GEORGE OAKLEY HEMING, Esq.	385
XI.	Case of peculiar Black Infiltration of the whole Lungs, resembling Melanosis. By JAMES CRAUFURD GREGORY, M. D.,	389
XII.	Observations on Cholera, in a Letter from HARRY LEAKE GIBBS, M. D.	395
XIII.	Case of Inguinal and Popliteal Aneurism, cured by tying the external Iliac Artery. By ALEXANDER EWING, M. D.	399

PART II.—CRITICAL ANALYSIS.

ART. 1.	1. Treatise on Cholera Asphyxia, or Epidemic Cholera, as it appeared in Asia, and more recently in Europe. By GEORGE HAMILTON BELL,	402
	2. History of the Epidemic Spasmodic Cholera of Russia; including a Copious Account of the Disease which has prevailed in India, and which has travelled under that name, from Asia into Europe. Illustrated by numerous Official and other Documents, explanatory of the Nature, Treatment, and Prevention of the Malady. By BISSET HAWKINS, M. D.	ib.
	3. Papers relative to the Disease called Cholera Spasmodica in India, now prevailing in the North of Europe,	ib.

PAGE

II. A Practical Dissertation on the Waters of Leamington Spa; including the History of the Springs, a new Analysis of their Gaseous and Solid Contents, the Rules for drinking the Waters, Bathing, &c. By CHARLES LOUDON, M. D. 41

III. Medico-Chirurgical Notes and Illustrations. Part I. I. On some dangerous Affections of the Throat which induce sudden Death by Suffocation. II. On Strictures of the Œsophagus and the dangers of the Bougie. III. On the cure of the falling down of the Bowel in grown persons. IV. Chronic abscess of the cheek from the irritation of a carious Tooth. V. Anomalies in Rupture Operations. VI. On Failures in Lithotomy. VII. Dilatation or Aneurism of the Posterior Aural Artery. VIII. On a Chronic encysted Tumour near the Testes. IX. Inflammation of the Testes, followed by suspicious circumstances. X. Imperforate Vagina. By R. FLETCHER, Esq. 41

PART III.—MEDICAL INTELLIGENCE.

Some considerations with respect to the Blood, founded on one or two very simple experiments on that fluid, ... 441
Case of Loss of Sight and Smell occasioned by a tumour in the base of the brain, 443
Case of Inflammation of the Spinal Chord producing Tetanus, . 444
Case of Perforation of the Stomach by latent Ulceration, . . 445
On the Identity of Small-pox and Cow-pox, and on a Mode of inducing the vaccine pustule in the cow at pleasure, ... 446
On the recurrence of susceptibility of Cow-pox and its connection with susceptibility of Small-pox, ... 447
On the Trades which predispose to Consumption, ... 448
Operation of various medicines on the healthy body, . . 451
Account by a Physician of the successful treatment of Empyema by Paracentesis on his own person, ... 455
On Inflammation of the Medullary Tissue of the Long Bones, . 457
Physiological Effects of various Poisons not previously examined, . 460
Case of Poisoning with Acetate of Morphia, ... 461
Report of the Lunatic Asylum of St Petersburgh for ten years subsequent to 1819, ... 462
Medical Graduations at Edinburgh, ... 464
Surgical Examinations at Edinburgh, ... 465
Edinburgh Hospital for Incurables, . . 466

NOTICES TO CORRESPONDENTS.

The number and extent of Original Communications deemed worthy of admission in this Number has been so considerable, that we have been obliged to defer the review of several works which it was our intention to have introduced.

Communications have been received from Drs Roberton, Cock, and Messrs Kerr and Carruthers.

The following works have been received:

An Account of Inventions and Improvements in Surgical Instruments, made by John Weiss, 62, Strand; with a selection of cases wherein they have been successfully employed, and testimonials of their utility from eminent surgeons. Illustrated by numerous Engravings. Second edition, much enlarged. London, Longman and Co. 1831. 8vo. pp. 200, and 27 plates. We have been favoured by Mr Weiss with a copy of the second edition of his work on Surgical Instruments. The author's zeal for the improvement of the *Armamentarium Chirurgicum* is well known, and his ingenuity in the construction of instruments is attested by many of the most distinguished names in the surgical profession.

Physiologie Medicale et Philosophique. Par Alm. Lepelletier, de la Sarthe, 4 volumes in 8vo, avec huit planches et des tableaux synoptiques, Tome i. Paris, au Mans, Belon Imprimeur-Libraire, Place St Nicholas, No. 2. Fevrier 1831. Pp. 495.

Du Procédé Opératoire a suivre dans l'exploration des organes par la percussion mediate, et Collection de Memoires sur la Physiologie, la Pathologie et le Diagnostic; Par P. A. Piorry, D. M. &c. Paris, Bailliere rue de l'Ecole de Medecine, &c. Londres, 219, Regent Street, 1830. 8vo. Pp. 431.

The Book of Analysis, or a New Method of Experience; whereby the Induction of the Novum Organon is made easy of Application to Medicine, Physiology, Meteorology, and Natural History; to Statistics, Political Economy, Metaphysics, and the more complex departments of knowledge. By Tweedy John Todd, M. D. of the Royal College of Physicians of London, &c. &c. London, John Murray, Albemarle Street, 1831. 8vo. Pp. 186.

Practical Observations on Prolapsus of the Rectum. By Frederic Salmon, F. R. C. S. &c. London, 1831. 8vo. pp. 105.

A Practical and Pathological Inquiry into the Sources and Effects of Derangements of the Digestive Organs, embracing Dejection and some other affections of the mind. By William Cooke, M. R. C. S. 2d Edition. London, 1831. 8vo. pp. 289.

Separation without Dissension. Observations addressed to General Practitioners on the best means of maintaining their Privileges and Respectability. By William Cooke, M. R. C. S. &c. London, 1831. 8vo. pp. 89.

The Pharmacopœia Universalis; or Complete Encyclopædia of the Materia Medica contained in the Pharmacopœias of London, Edinburgh, and Dublin, as well as of all those of Europe and America; and of the Dispensatories, Formularies, and Chemical works of, (here follows a list of 31 authors, &c. &c.) By A. J. L. Jourdan, M. D. of Paris, with an Appendix, (a long list again.) Edited by J. Rennie, A. M. A. L. S. &c. Author of a new Supplement to the Pharmacopœias; Editor of the Quarterly Journal of Foreign Medicine; and Professor of Natural History, King's College.

Outlines of the Ancient History of Medicine, being a view of the progress of the Healing Art among the Egyptians, Greeks, Romans, and Arabians. By D. M. Moir, Surgeon. William Blackwood, Edinburgh, and T. Cadell, London, 1831.

Pathological and Practical Researches on Uterine Inflammation in Puerperal Women. By Robert Lee, M. D. F. R. S. Secretary to the Medico-Chirurgical Society, Physician to the British Lying-in Hospital. From the 16th volume of the Medico-Chirurgical Transactions, London. London, 1831. Pp. 84.

A Manual of Medical Jurisprudence, compiled from the best Medical and Legal works, &c. By Michael Ryan, M.D. London, 1831. 8vo. Pp. 309.

Aur. Corn. Celsus on Medicine in eight books, Latin and English. Translated from L. Targa's edition, the words of the text being arranged in the order of construction. To which are prefixed a life of the author, tables of weights and measures, with explanatory notes, &c. designed to facilitate the progress of medical students. By Alex. Lee, A. M. Surgeon. In two volumes, Vol. i. London, 1831. 8vo. pp. 318. A very creditable translation, and altogether a useful book to the slenderly Romanized student. It is, nevertheless, a bad sign of the literary education of the profession, when such a work appears. *Sed de gustibus;* the proverb is something musty.

Cholera, its Nature, Cause, and Treatment, and Prevention, clearly and concisely explained, by Charles Searle, Esq. of the H. E. I. C. Madras Establishment. London, 1831. pp. 39.

The Medico-Chirurgical Review, and Journal of Practical Medicine, Edited by James Johnson, M. D. &c. London. No. 29. July. London, 1831.

The London Medical Gazette, Nos. 192, 193, 194, &c. from July to September.

The London Medical and Surgical Journal, &c. Edited by Michael Ryan, M. D. &c. No. 37, 38, 39, for July, August, and September. London, 1831.

We take the present opportunity of announcing to our readers, that the account of the Cholera at Moscow which appeared in the Intelligence of our 107th Number, for April 1831, was from the pen of Dr Keir of that city. The name was withheld at the time of publication, for no other reason than because we were not sure whether we were authorized to publish it, as the letter was transmitted to us from the relative to whom it had been addressed. The letter, however, has now been referred to several times, and is published in the work of Dr Bisset Hawkins; and we think it is but right that it should no longer be anonymous, more especially as Dr Keir has since published avowedly a good account of the morbid appearances of the disease. We trust Dr Keir will not be displeased with this intimation.

THE

EDINBURGH

MEDICAL AND SURGICAL JOURNAL,

No. CVIII.

CONTENTS.

PART I.—Original Communications.

Page

Art. I. On Phlegmonous Tumours in the right Iliac Region. By J. M. Ferrall, Esq. 1

II. Medical Reports. By D. J. Corrigan, M. D. . . 24

III. Cases with Dissections and Remarks. By W. Davidson, . 35

IV. A Case of probable Dislocation of the Heart from external violence. By William Stokes, M. D. 44

V. Observations upon Indurations of the Omentum, accompanying Strangulated Hernia. By John Browne, M. D. . . 50

VI. A Case of Injury of the Œsophagus and Stomach ending fatally. By John Browne, M. D. 56

VII. A Case in which a Nose was Supplied. By Maurice Collis, A. B. 62

VIII. A Case of insidious and violent Inflammation and sloughing in the Right Iliac Region terminating in fatal Hemorrhage. By J. F. Nivison, 66

IX. On the Treatment of Malignant Ulcers of the Nose and Face. By Francis Adams, Esq. 75

X. On the Utility of the Secale cornutum as a Uterine Excitant. By William Henderson, Esq. 82

XI. Medico-legal Examination of two Cases of sudden Death from Wounds. By Alexander Watson, Esq. 85

XII. Case of Poisoning with Corrosive Sublimate. By Archibald Blacklock, Esq. 92

XIII. Case where a large quantity of Arsenic was entirely expelled from the Stomach by Emetics two hours after it had been swallowed. By William Kerr, Esq. . . . , 94

XIV. Cases of Poisoning by Sulphuric Acid. By Martin Sinclair, M. D. 99

XV. Case of Spontaneous Varicose Aneurism. By James Syme, Esq. 104

XVI. Case of Periostitis of the Head successfully treated by free division. By Archibald Blacklock, Esq. 106

XVII. An improved Instrument for Extracting Teeth. By Thomas Hardy, 110

XVIII. Observations on the Treatment of Mania and Delirium Tremens by large doses of Tartar Emetic. By John Spence, Esq. . 112

PART II.—Critical Analysis.

Art. I. Die Asiatische Cholera in Russland, &c. On the Asiatic cholera as it appeared in Russia in the years 1829 and 1830. From the Russian Official Documents. By D. J. R. Lichtenstadt, . 118

II. The Dublin Hospital Reports, and Communications in Medicine and Surgery, ... 145

III. 1. Report of the Wellesley Female Institution. By Samuel Cusack, A. B., M. B.

2. Report of the Coombe Lying-in-Hospital. By Richard Reed Gregory, ... 162

PAGE
IV. The effects of the principal Arts, Trades, and Professions, and of civic states and habits of living, on Health and Longevity; with a particular reference to the trades and manufactures of Leeds: and Suggestions for the removal of many of the agents which produce disease and shorten the duration of life. By C. TURNER THACKRAH, 167
V. Official Papers on the Medical Statistics and Topography of Malacca and Prince of Wales Island, and on the Prevailing Diseases of the Tennaserim Coast. By T. M. WARD, M. D. and T. P. GRANT, Esq. 179
VI. A Practical Treatise on the Diseases of the Eye. By WILLIAM MACKENZIE, ... 197
VII. 1. A Rational Exposition of the Physical Signs of the Diseases of the Lungs and Pleura; illustrating their Pathology, and facilitating their Diagnosis. By CHARLES J. B. WILLIAMS, M. D.
2. A Treatise on Auscultation, illustrated by Cases and Dissections. By ROBERT SPITTAL, Esq. 200
VIII. 1. Anatomical Atlas. By M. J. WEBER, M. D.
2. Explanation of the Anatomical Atlas of Dr M. J. Weber.
3. Anatomical Demonstrations, or Colossal Illustrations of Human Anatomy. By Professor SEERIG, ... 202
IX. Illustrations of Mr Samuel Cooper's Surgical Dictionary, . 204
X. Outlines of Physiology, with an Appendix containing Heads of Lectures on Pathology and Therapeutics. By WILLIAM PULTENEY ALISON, M. D. 207

PART III.—MEDICAL INTELLIGENCE.

On the Developement of the Vascular System in the Fœtus of Vertebrated Animals. By ALLEN THOMSON, M. D. 209
On the Endosmose and Exosmose of Gases, and the application of these phenomena to explain the phenomena of Respiration, . . . 211
Operation of Lithotomy by a native Doctor of Hindostan, . 213
Cæsarean Operation successfully performed, ... 214
On the respective prevalence of Pneumonia at different ages, and in the two sides of the chest, ... 215
On the liability of the Monkey Tribe to Tuberculous Diseases, . 216
Remarkable instance of Hemorrhagic tendency in a family, . . . 217
Case of Apoplexy of the Spinal Chord, ... 220
Case of General Emphysema produced by Combustible Gas, . . . 221
Case of Acute General Inflammation of the Arteries, . . 222
Case of Amaurosis treated with Strychnia. By P. B. HENDERSON, M. D. 223
Observations concerning the Bark of the Root of the Pomegranate-Tree as a Remedy against the Tape-worm. By RICHARD PEARSON, M. D. 224
On the preparation and medicinal use of Lactucarium or Lettuce-Opium, 224
Case of the successful treatment of Snake-bite by cupping-glasses, . 226
Poisoning with a Tobacco-clyster, ... 227
On the Grinder's Phthisis, ... 227
National Vaccine Establishment, ... 230
Surgical Examinations at Edinburgh, ... 231
Proposed General Scientific Meeting at York, ... 231
Notice to Students of Medicine, . . . 232

NOTICES TO CORRESPONDENTS.

Communications have been received from Dr ALEXANDER EWING, Mr OAKLEY HEMING, and Mr PAGET.

The following works have been received:

A Practical Dissertation on the Waters of the Leamington Spa; including the history of the Springs. A new analysis of their gaseous and solid contents, the rules for drinking the waters, bathing, &c. By Charles Loudon, M. D. Physician at Leamington. Third Edition. Leamington Spa, 1831. 8vo. pp. 90.

No. V. of Medical Zoology and Mineralogy, or illustrations and descriptions of the Animals and Minerals employed in Medicine, and of the preparations derived from them, &c. &c. &c. with figures coloured from Nature. By John Stephenson, M. D. F. L. S. London, May 1, 1831. Plates 16, 17, 18, and 19.

On Canine Madness, comprising the symptoms, *post-mortem* appearances, nature, origin, and preventive and curative treatment of Rabies in the Dog, and other domestic animals. By W. Yowatt, V. S. and F. Z. S. London, 1830. 8vo. pp. 52.

An Introductory Lecture to the Theory and Practice of Midwifery; being an historical account of that subject publicly delivered in London, October 4, 1829. By Thomas Greening, M. D. late Obstetric Physician to the City of London Lying-in Charity. London, 1831. 4to. pp. 38.

Cases of Lithotrity, or Examples of the Stone cured without incision; followed by a description of the first symptoms of the disease. By Baron Heurteloup, Doctor of the Faculty of Medicine of Paris. London, 1831. 8vo. pp. 54.

Distinction without Separation. In a letter to the President of the College of Surgeons on the present state of the profession. By Joseph Henry Green, F.R.S., F. G. S. Professor of Anatomy to the Royal Academy, Professor of Surgery at King's College, one of the Surgeons of St Thomas's Hospital, &c. London, 1831. 8vo. pp. 47.

An Introductory Lecture on Midwifery, comprising a critical, historical, and ethical disquisition, on that branch of medical science. Delivered 7th February 1831, at the School of Medicine in Liverpool. By Samuel Malins, M. D. &c. &c. London, 1831. 8vo. pp. 47.

An Appendix to the Popular Summary of Vaccination, comprising experiments with Small-pox Virus upon the Cow, and further remarks on the practice of Cow-pox. By John Marshall, Esq. M. R. C. S. London, &c. &c.

NOTICES TO CORRESPONDENTS.

The Art of Preventing the Loss of the Teeth, with instructions calculated to enable medical practitioners, heads of families and others, travelling or residing in distant parts, to adopt the author's practice of treating the diseases of the teeth and gums; including the stopping of decayed teeth, and curing of toothach by the use of anodyne cement, &c. &c. By Joseph Scott, Dentist. London, 1831. 8vo. pp. 100.

The London Medical Gazette, from March 12th to June 18th, No. 172 to No. 185.

The Medico-Chirurgical Review and Journal of Practical Medicine. Edited by James Johnson, M. D. &c. No. 28. April 1831.

The London Medical and Surgical Journal, &c. Edited by Michael Ryan, M. D. &c. No. 33—36, April—June, 1831.

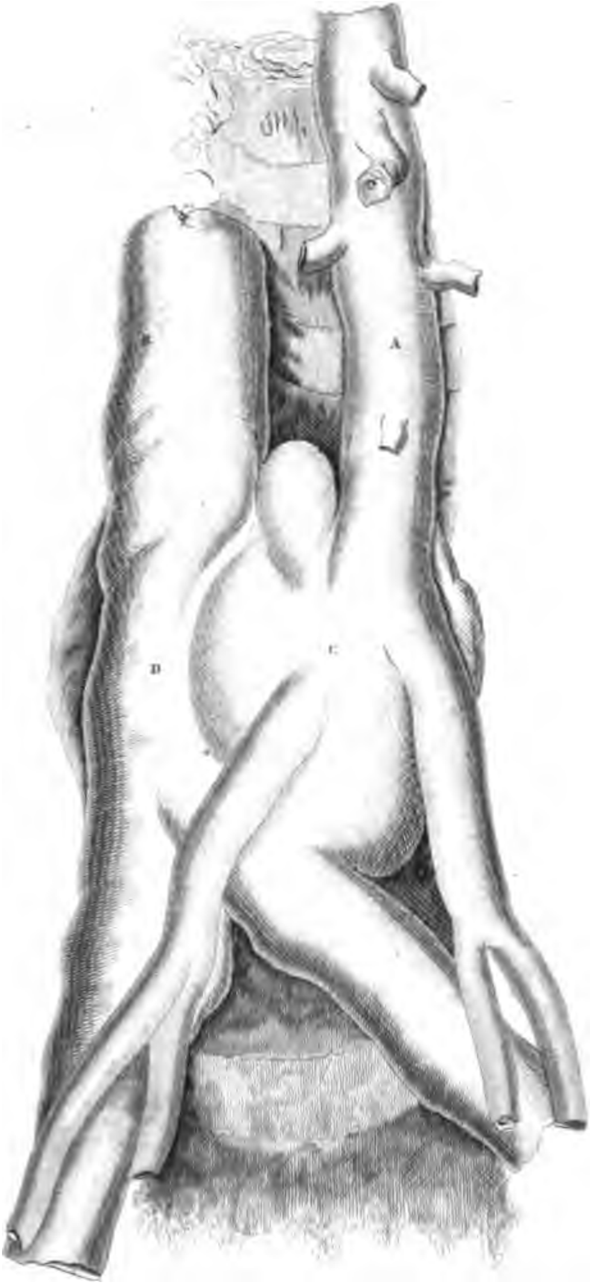
The Midland Medical and Surgical Reporter, and Topographical and Statistical Journal, Vol. I. 1828—29, containing six numbers. Worcester. 8vo. pp. 444. Five numbers of Vol. II. 1830, from February 1830 to February 1831, inclusive.

Engravings of the Arteries of the Human Body, from Tiedemann, No. 33 to 38, inclusive.

Edinr Med. & Surg. Jour. 1.

Mr SYME'S CASE.

Varicose Aneurism.



A *Aorta.*
B *Vena cava.*
C *Aneurism.*
D *Part of the vein which communi-*

THE
EDINBURGH
MEDICAL AND SURGICAL JOURNAL.

1. JULY 1831.

PART I.

ORIGINAL COMMUNICATIONS

ART. I.—*On Phlegmonous Tumours in the right Iliac Region.* By J. M. FERRALL, Esq. Member of the Royal College of Surgeons in Ireland, Surgeon to the Maison de Santé, and the Institution for the Treatment of Scrofulous Complaints.

THE substance of the following pages was prepared before the memoir from the *Clinique* of M. Dupuytren appeared; but motives which I cannot even now condemn induced me to delay its publication. The inquiry, though interesting, was then untouched; and although the disease had long engaged my attention, and I had already learned to recognize it when perfectly formed, I was slow to communicate the information of which I was possessed, until I could produce a series of cases to constitute a history of the causes and course of the affection.

Subsequent experience has thrown some light on phenomena formerly involved in obscurity, while it has generally confirmed the views afforded by my original observations. I have no reason, then, to regret a delay that has increased my own intimacy with the subject. The necessity, however, for an extended paper, is obviated by the Memoirs of *MM.*[*] *Husson*, *Dance*, and *Meniere*,[†] and I consequently withhold a collection of cases, which would only repeat, without strengthening the impressions created by their accurate delineations of the disease. But having seen the complaint occasionally take a course somewhat different from that already described, and having reason to believe it may have its origin in other causes than those to which it has been ascribed, I have selected from those in my possession, such cases as appear to illustrate a portion of its history, of which no evidence has hitherto been adduced.

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[*] Répertoire, Tome iv.

[†] Archives Generales, Tome xvii.

The acute form of the disease, wearing the menacing aspect of general abdominal inflammation, will, if not precisely ascertained, receive at least the active treatment and attention which the violence of the symptoms cannot fail to suggest. The chronic form is that which is most liable to be overlooked. The vomiting of the acute species has in the latter case the form of nausea so common to a capricious and dyspeptic stomach—the pain is referred to a colicky or flatulent origin; and days and even weeks of uneasiness are suffered to elapse without any efficient step being taken for its removal. This insidious affection may be overlooked for other causes which peculiarly belong to the applicants at public institutions. Those who are accustomed to hospital or dispensary practice, recollect the vague and unsatisfactory accounts they every day receive from persons in the humbler walks of life when describing their complaints. If they dilate upon a painful feeling suffered in some abdominal organ, the wide-spread hand is passed across and moved about while they are speaking, in bewildering conformity with their eager but unintelligible description; and if previous experience has not imparted some tact in the particular complaint, or want of leisure precludes more particular investigation of the symptoms, they are likely to return without relief, again to mingle with the crowd by which the surgeon is overwhelmed. With the educated classes of society it is different. Habitual attention to their own feelings enables them to describe accurately what they endure, and their less figurative, but more careful phraseology, imposes little upon the hearer beyond a reasonable attention to their statement. Through the former class we have more numerous opportunities of tracing the pathological conditions which immediately precede the final change occasioned by disease; but it is by intercourse with the latter we become familiar with its language and manifestations during life.

Pain, more or less acute, referred to the right iliac region, is the symptom which generally urges the patient to seek advice. This leads to a careful examination of the parts; and if we find there a deep-seated immoveable tumour, extremely painful to the touch, we have the leading character of the complaint. The history of the case, with the position and feelings of the patient, and the state of the limb, will assist us to distinguish it from the commencement of abscess in the psoas or iliacus muscles, or in the abdominal parietes. On this it is necessary to dwell more particularly when describing the cases to which they bear the strongest resemblance.

When the evidence opposes this view, and we refer the phenomena to the cœcum, we have still to consider how far the tumour may be constituted by impacted fecal matters alone,—how much of its bulk may consist of phlegmonous deposits external to the gut;—and whether the neighbouring peritoneum be involved to any material extent. The condition of the lining membrane of the cœcum should also be considered, for it will appear that the tumour may in some instances be occasioned by inflammation of that membrane transmitted to the contiguous tissues, while in others it seems to arise from perforation of the intestine by ulceration, and the contact of its fecal contents with the cellular structure immediately on its outside.

I intended to consider the states here alluded to under the general denomination of *Tumours of the Cœcum*, because I observed them to bear a reference, near or remote, to the condition of that organ. The term phlegmonous tumour is, however, retained, partly because the majority of cases met with present some traces of inflammatory action, but principally because the descriptions will be more readily recognized as relating to the affection described by M. Dupuytren under the title of *Phlegmonous Tumours of the right Iliac region.*

On inquiring into the contents of a tumour in the iliac region, we, however, meet cases which do not arrange themselves under the class of merely phlegmonous tumours, in the sense in which it is has been applied. The employment of the term is founded on an opinion that all these swellings are occasioned by inflammation and deposition of lymph in the cellular membrane in the iliac fossa, while little regard is paid to the scybalous masses by which the cœcum is notwithstanding frequently distended, and of which the tumour will be sometimes found exclusively to consist. Occasional colicky pains, superadded to a feculent tumour of the cœcum, may complete the resemblance to the true phlegmonous tumour, and all this independent of well-characterized inflammation.

Even flatulent distension of the cœcum is a frequent source of distress. There are few persons attentive to their own sensations who may not have observed a sense of tension to be occasionally produced in this situation, by horse exercise immediately after breakfast or any full meal. The pain is acute—is relieved by pressure, and generally goes off in a few minutes.

It appears to be occasioned by flatus, and whether or not a full stomach may press the colon, interrupting the passage of its gaseous contents, and throwing back upon the cœcum the force exerted by the abdominal muscles—while the recent meal is at the same time a stimulus to the general peristaltic movement of the intestines,—it is certain that much inconvenience arises from any agitation of the abdomen in this state. The pressure appears to relieve by forcing a portion of the distending cause along the course of the colon, where it is better endured, because more easily dispersed and divided than in the *cul de sac*, into which the cœcum is converted by its valve.

The relaxed appearance and slit-like form of the valve, as it appears in the ordinary examination of the dead body, afford a very imperfect notion of its condition during life. In the course of observations made a short time since at the College of Surgeons on the mucous coat of the alimentary canal in the body of a criminal recently executed, it was found exceedingly difficult to force the finger through this valve, which, viewed at either side, was observed to be pursed up and accurately closed. This appearance was remarked by Dr Marsh and Mr Houston.

It is probably in this condition of the parts that contusion may be fatal; and of this the case related by Dr Speer [*] is a melancholy instance. The patient in wrestling fell upon his antagonist's bent knee, and survived but forty-eight hours. The cœcum was ruptured, the contents effused, and he died of the inevitable result. In this case the abdomen was struck at the umbilicus, although the rupture took place in the cœcum,—a circumstance which could hardly have occurred, notwithstanding the fixity of the intestine, if the resistance at the valve had been more easily overcome.

The distension produced by feculent matter is a more serious, because less transient, source of uneasiness, and pressure is here uniformly unpleasant to the patient. This is not peculiar to the cœcum; a full colon has occasionally been treated by the usual remedies for hepatic disease; and the diagnosis has been apparently justified by tenderness on pressure, and resistance and tension in the muscles which protect the hypochondriac and epigastric regions.

That vascular congestion exists in the majority of cases of painful tumour of the cœcum is what I am ready to admit; but that we may have a painfully distended cœcum, without any marked evidence of inflammatory action, and, above all, without any tumefaction of the cellular membrane in the iliac fossa, I have more than once been satisfied. M. Meniere is, however, of a contrary opinion, and believes the tumour to consist in every instance of deposits external to the intestine, considering the inflammation as the primary and essential condition of the complaint. He looks on the constipation as altogether accidental, neither constituting the bulk of the tumour, nor having any share in the production of the disease. The following case, with others, have led me to a different conclusion. It was one of the first instances I had met with, and I merely transcribe the notes made at the time of the attendance:

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[*] Dublin Hospital Reports, Vol. iv.

No. 1.—*Feculent Tumour of Cæcum.*

4th July 1828.—I was requested by M. K. to see Margaret Hopkins, aged 18, the daughter of his housekeeper. She had passed a sleepless night, raving constantly. She was tossing about in the bed, and kept her eyelids forcibly closed; talked incoherently, but when questioned complained of pain in the right side of the abdomen. On examination, (to which she was very averse,) the right iliac region was found to be swelled, hard, and apparently very tender. The remainder of the abdomen was pliable to the touch. Bowels confined for the last five days, but she was yesterday apparently in good health; tongue loaded at the back part, clear white anteriorly, and along the sides; skin hot; pulse when first felt (which was immediately after the examination of the tumour) 120, and small. This suggested the idea of inflammation; but before I left her I found it reduced successively to 100, 90, and finally to 75. She was thirsty, but there was no irritability of stomach.

The abdomen ordered to be fomented, and an enema to be thrown up, (containing *Oleum Terebinth.* and fœtid tincture,) every fourth hour *ad effectum.*

Vespere.—She is better. An hour after the enema was administered a quantity of indurated feces came away. The enema was repeated with continued effects. She is now free from pain and perfectly composed; skin moist; pulse 70; no trace of swelling or tenderness is discoverable in any part of the abdomen.

In this case it is probable that the irritation of the mucous coat must in a short time have induced inflammation, which might have been propagated to the neighbouring tissues, and one of the other forms of the complaint have been established. It is not unlikely that in a male patient, or in an individual of less excitability, the case would have been allowed to go on without attention until this had actually occurred. As far as I have observed, the aggravated forms of the disease are most frequently met with in men. It would appear that the earlier stages excite less disturbance in them; and, on the other hand, it cannot have escaped observation, how slight a degree of irritation in females is capable of rousing the hysterical diathesis into action, and how little can be done to soothe the disturbance as long as there is any source of irritation in the alimentary canal. The tumour in this instance consisted altogether of indurated feces, and the pain on pressure could not be supposed to have an existence independent of that cause. No trace of either could be discovered, by the most careful examination, from the moment when the complete evacuation of the intestine was accomplished.

We may have then a painful tumour in the right iliac region depending exclusively upon the presence of hardened fecal matter, and with this fact before us, and our frequent experience of the irritation, occasioned by retained excretions, we cannot agree with M. Meniere in denying their occasional agency in the production of the disease in question.

The period at which the circulation in the lining membrane of the irritated bowel becomes involved will depend on the general susceptibility of the constitution to morbid action, as well as the habits of the individual at the time. In most instances of this condition which I have witnessed, the patients have lived rather freely, and in those where the increased action took on the suppurative process, the digestive tube had suffered from continued and unsparing intemperance. When this is not the case, the progress is slow, and the symptoms usually mild. It is more under the influence of remedies, and, if seen in time, will rarely disappoint us in our endeavours to effect its resolution.

The following case is presented, because it is contrasted by the comparative indolence of the constitution with the former, and because it illustrates the mercurial practice, which I believe to be useful in most instances of the disease before the process of suppuration is established.

No. 2.—*Phlegmonous Tumour of Cæcum.*

On the evening of the 13th of August 1826, Mr L——— was seized with bowel pains, accompanied by nausea and general feeling of illness. He took some castor oil, but it did not remain on his stomach. Other purgatives were tried, but they failed to move the bowels, and only added to the general distress. His bowels had been irregular for three or four weeks, and were now obstinately confined.

I saw him on the 18th August. He spoke of slight bowel pains and flatulence; but the stomach had been quieted by infusion of mint, of which he drank very sparingly, although he had considerable thirst. The abdomen was generally full, but yielded readily to pressure until the hand traversed the right iliac region, and here there was a good deal of tension as well as tenderness to the touch. On more careful examination, the fulness was found to occupy about a hands-breadth, commencing near the anterior superior spinous process of the ilium, and passing towards the middle line, and from a little way above Poupart's ligament for about four inches upwards. The tumefaction was evidently at some depth, but in order to ascertain whether the parietes were concerned, I requested him to place himself on his hands and knees. In this position it was manifest that the parietes were disengaged. They rolled freely across the tumour, and its fixed position in the iliac fossa was no longer matter of doubt. He had no symptoms which could lead to a suspicion of disease in the neighbouring parts.

His tongue was covered with a dull yellow coating, particularly at the base and along the middle line; pulse 90, and of moderate fulness; skin hot and dry. He lay on his back with his knees drawn up. His countenance was not expressive of uneasiness; and he complained little except when he moved in the bed.

With a view to open the bowels, without interfering with the tranquillity of the stomach, enemata were prescribed, and he was ordered to be placed in a hip-bath after the application of twenty leeches to the painful tumour.

On the 19th he was rather better; a quantity of *scybala* had come away. The general fulness of the abdomen was less than on the day before, while that of the right iliac region was now perceptible to the eye; the soreness was scarcely lessened, but he could move about better in the bed. Tongue as before; pulse 84.

The purgative indication was directed to be pursued by *enemata*, and the leeches and hip-bath to be repeated. The stomach being tranquil, calomel was prescribed in doses of one and a-half grain every fourth hour. It was hoped that the calomel might assist the action of the enemata, and ultimately reach the mouth.

August 21st.—Mr Colles saw him with me. Some more *scybala*, with a quantity of fluid matter, had passed, and the bulk of the tumour had lessened. There was still much tenderness on pressure; tongue still loaded; pulse 84, soft; skin moist about the wrists, but the limbs otherwise dry and hot. He slept better last night.

It was agreed to continue the calomel and watch its effects. Enema every six hours.

August 22d.—The dejections were now quite fluid and of nearly a natural colour. The abdomen was reduced, and quite soft every where but in the situation of the tumour. The swelling was much less, and gave to the finger the sensation of deep-seated thickening gradually lost in the surrounding parts; pulse 86; tongue a little more moist, but loaded.

August 24th.—He complained of metallic taste; breath tainted; slight swelling of the gums; pulse 94, soft, and full; dejections fluid and yellow; thickening in the iliac region rather less, and now scarcely painful; tongue white at the edges, and coated along the middle line. In this and the increased frequency of pulse, we recognize the mercurial action on the system. Calomel discontinued.

25th.—Mouth sore, gums a good deal swelled; thickening diminishes; no pain on pressure; pulse 90.

From this period the case went on well; the thickening gradually disappeared, and he recovered appetite as the mercurial fever subsided; but for a week or ten days a small knot could be distinctly felt on careful examination.

Here we have the disease affecting the coverings of the cœcum; coagulating lymph thrown out as the *nidus* of a future abscess, and yet comparatively little implication of distant parts, except that produced by the ineffectual attempt to make purgatives pass through the point of interruption. No practice is more apt to lead to mischievous results. In most cases of constipation, when one or two moderate aperients fail, it is not prudent to push the means of relief farther by the employment of purgatives of a more violent kind. Such a course would be likely to hurry the contents of the canal into one mass, when the natural consequences, over distension and inflammation, will inevitably ensue. *Enemata*, with general means of relaxation, as warm bath, or the abstraction of blood, should be principally relied on.

Mercury does not appear to enter into the treatment at the Hôtel-Dieu; but while we are engaged in lessening the inflammation by depletion, we should not lose sight of the propriety of attempting the removal of the effects already produced by diseased action, as far as it has gone. Independent of the coagulable lymph thrown out in the cellular tissue surrounding the *cœcum*, it is probable that some degree of thickening has taken place in the mucous and peritoneal coats. Though this may subside in the progress to convalescence, it may, on the other hand, remain and become the nucleus for disease at a more distant period, when a resumption of imprudent habits shall have exposed the parts to fresh irritation. Chronic disease in this situation is not very uncommon; and with this experience it becomes our duty to institute, as early as possible, a plan for promoting the absorption of effused fluids, and the restoration of healthy action in the parts. The peculiar power of mercury is here favourable to our purpose, and after the reduction of the urgent inflammatory symptoms, generally fulfils the indication with tolerable certainty. A case is lately detailed by the editor of the Medico-Chirurgical Review, in which this remedy was employed by himself with the best effects; and, as far as I have observed, I believe it will be found to constitute a very efficient instrument in combating this dangerous affection.

For reasons already assigned, I have thought it unnecessary to detail any other cases which, like the preceding, presented themselves before the process of suppuration was established, and yielded, like it, to the treatment adopted for its prevention. Suppuration having, however, taken place in the tumour, the matter generally takes a direction either into the cavity of the cœcum or colon, bladder, vagina, or rectum, or else in rare instances presents itself at the lumbar region, after having traversed the substance of the mass of muscles there. This latter course I have not seen. M. Dupuytren describes it, and if I do not mistake, as the only situation in which he has observed an external opening to take place. He has never seen a recovery. The discharge *per anum* is unquestionably that which appears to conduct the case to the most favourable issue. That formidable opponent to recovery, inflammation of the sac of an abscess, seems less likely to take place in this process than in any other. A variety of circumstances seem combined to prevent in most cases contact with the atmosphere. But suppose the discharge to have taken place *per anum*, are we then to prognosticate an uninterrupted course to convalescence, and may we hope that this outlet will be sufficient for the curative purposes of nature? The following case shows that a discharge by the intestine does not imply an exemption from the occurrence of a subsequent opening through the parietes of the abdomen; it also proves the possibility of occasional atmospheric communication without the transmission of feces, while it exhibits the truly formidable symptoms which accompany inflammation and sloughing of the lining membrane of the abscess itself.

No. 3.—*Abscess about the Cæcum pointing in two directions.*

On the 24th April 1827, I saw Mr M——, under the following circumstances. There was a large oblong painful tumour in the right iliac region, with a firm margin and yielding centre. It was very deep-seated and fixed. The abdominal parietes could be moved over it, but there was a decided fluctuation conveyed to the fingers. A blister had been applied by his apothecary, and the part was now healed. His stomach was tranquil, but he had no desire for food. Bowels free; tongue loaded; skin dry and hot; pulse 90, and full. Four weeks ago he was seized with pain in the part, accompanied by bilious vomiting, which lasted three days. The tumour appeared a few days after. He admits that he has indulged freely in spirituous liquors for some time, and has been sensible of pain in the seat of tumour for a month or two, when taking exercise. With a view to improve the secretions, he was directed to take a small quantity of blue pill, with soda, at night, and light bitters in the morning; the tumour to be soothed by fomentations, and its progress observed.

26th April.—No material change in the tumour, but the general symptoms improved; pulse 80; skin cooler; tongue less coated, and he has eaten some chicken with appetite.

28th.—I was requested to see him on account of pain in the tumour. Skin again hot; pulse 100. On examination the tumour was found to be flattened, and the fluctuation scarcely perceptible. On carefully pressing it, a gurgling noise was produced on its abdominal side, or that towards the middle line, and its bulk still further diminished. An emollient enema was directed, and frequent fomentations with *Decoct. Papaveris*. The day following, the discharges by stool were evidently mixed with matter. The continued use of enemata and stupes restored tranquillity in the parts. Matter continued to be discharged, and he appeared to go on tolerably well until the night of the 6th May, when he had violent rigor, followed by profuse perspiration.

7th May.—Mr Colles saw him with me. His countenance was now bad; tongue dry and brown; pulse 100, full, but weak; discharge from the bowels fluid and purulent at bottom, with an appearance of white dots like particles of oatmeal intermixed. The tumour is contracted at its upper extremity; the lower end is prolonged towards Poupart's ligament, but very deep-seated; integuments unaltered. On account of the urgency of his hectic symptoms, it was thought expedient to remove him cautiously to the suburbs, while the state of the tumour was carefully watched.

12th.—He rallied a little the first day or two after leaving the city, but now labours under hectic fever of an active kind. He has thirst; perspiration on the head and chest every night; pulse 120, and feeble; the outline of the tumour can be felt at considerable depth; a fulness is perceptible in the situation of the inguinal canal, and reaching as far as the external ring. It is painful on pressure, elastic, and gurgling, giving the sensation of a fold of intestine adherent to the skin; the integuments are neither discoloured nor thickened. His strength is supported, and the discharge by bowels promoted by occasional enemata.

16th.—Mr Colles saw him with me again to-day. There was a circular patch of red skin at the pubal extremity of the lower tumour: it was more prominent than the remainder, but tympanitic, and giving on pressure a slight gurgling noise. His features were sharpened, and expressive at once of anguish and exhaustion. His eyes were sunk, and he spoke in broken whispers. It was evident that something must be attempted. The present condition could not last very long. Some action was going on, for which the powers of his constitution appeared to be inadequate; and his pulse had that peculiar character which I have more than once observed to precede a sudden and fatal sinking: it was remarkably full; but the fulness had this peculiarity, that it did not appear to diminish during what is termed the systole of the vessel: the artery was very yielding, with little power of reacting on its contents: the beats, as it were, ran into each other; the slightest pressure obliterated the tube, and the substance of the attenuated vessel was then hardly to be felt. The most obvious indication was to make a puncture at the point where the process of thinning was going on; but the question then arose, what was the structure into which the perforation would be made? was it a fold of intestine adhering to the skin, or was it the prolongation of the abscess, into which air from the intestine had escaped? And, again, if it were done, should we reach matter, or relieve tension of any kind? However, as the puncture would be merely an anticipation of a process in which nature was then actually engaged, and as much of the urgency of the symptoms might be occasioned by the effort, it was decided on and done. A quantity of fœtid air rushed out, followed by a few drops of blood, but no pus issued. Pressure was made; and about a teaspoonful of brownish pus, mixed with small flakes of lymph, was tediously expelled. Change of position was then tried, and a director cautiously introduced in the direction of the pelvis. This was more successful; and about a table-spoonful of dark-coloured matter flowed through the groove of the director. So far the result was satisfactory. It was the sac of an abscess we had penetrated. The opening was cautiously dilated; he was placed upon his right side, and an anodyne prescribed.

The following day (17th) his countenance was manifestly better. Tongue softer; pulse 120, weak, but more distinct; skin warm, but covered with a clammy moisture. He had slept five hours, and had taken a little soup and wine at intervals. A slough was hanging from the wound: it had a membranous appearance when drawn out. It was four inches long, and one and a-half broad; but, after being washed, nothing like organization was perceptible. A copious discharge of fœtid pus followed, and was forced freely up by coughing. Not the slightest trace of fecal matter to be seen. He was ordered sulphate of quinine in infusion of roses; and a roller was gently passed round the abdomen, and made to sustain two compresses, one over the pubis, in the direction in which matter appeared to lodge, and another between the nates, with a view to support the viscera of the pelvis. He was placed on his right side.

His condition gradually improved from this time. The matter became thick and creamy; a counter-opening was made near the pubis on the point of a director; the matter issued freely, and in a few days deserted the former opening altogether; the pulse was reduced in frequency, and he acquired appetite and strength.

About the middle of June he was able to walk very well. He was free from pain, and had little trace of the disease, except slight induration of the integuments: the discharge had ceased: his constitution had rallied, and he returned to town in tolerable health.

I saw this person lately in good health, more than two years after the illness. The right inguinal canal is fuller in the erect position than that of the opposite side; but there is very little induration remaining.

The inflammation and sloughing of the cyst brought this patient to the verge of the grave. It is remarkable, however, that, during the vicissitudes of healthy and morbid actions, to which the abscess was exposed, no trace of fecal matter was observed in the discharge. The opening permitted a communication with the air, but was capable of excluding every thing else. M. Dupuytren thinks this is occasioned by general pressure of the parietes preventing a vacuum in the abscess, assisted by the probable obliquity of the communication, and the folding of the mucous membrane in the manner of a valve. These will no doubt have their effects; but I am inclined to believe that it is not a little owing to the nature of the opening itself, which, like what we see occur in abscesses in other situations, is probably very small, particularly on its intestinal aspect, and, like the opening made by a wound, is liable, though not to the same extent, to be blocked up by the tumid mucous membrane, puckered by the action of the muscular coat, through the fibres of which the matter makes its way.

In these cases the perforation took place from without inwards towards the cavity of the gut. It is the only form of communication M. Dupuytren has described. The following is an instance in which the perforation was *from within outwards*, and the abscess was *secondary*. It is altogether a more serious form of the complaint, as, independent of its greater tendency to involve the general peritoneum, it inevitably leads to the formation of an artifical anus.

No. 4.—*Abscess from Ulceration of the Cæcum.*

2d August 1827.—Mr G—— requested me to examine his groin. There was an irregular ulcer, about four inches in length, along the course of Poupart's ligament. The margin was dusky red, jagged, and undermined; a small slip of purple skin crossed its course, near its external extremity; its pubal end was occupied by a small gland, coated with lymph of a dull white colour. Nearly midway, but rather nearer to the pubal extremity, a small aperture, concealed by the jagged margin of the ulcer, admitted a probe, which passed upwards and backwards for about three inches, when it stopped. The lint with which it had been covered was smeared with a discharge of bright yellow feces mixed with pus. The nature of the disease was obvious, although at first sight it so closely resembled the ulceration which succeeds a sloughing bubo. His case was very hopeless, for he had phthisical symptoms of long standing; his pulse was 130, small and feeble; he respired twenty-eight times in a minute; his flesh was wasted; his chest, the left side particularly, had a dull sound, little respiratory murmur, and his expectoration was copious and purulent. He stated that he had cough a long time; and for the last four months had been subject to bowel complaints, occasionally passing blood, and suffering more or less pain in the right iliac region. About six weeks ago the pain became severe after horse exercise; he became violently ill with shivering and fever; a tumour was felt, which confined him to his bed, and in the course of a few days burst in the groin. A large patch of the skin mortified; the discharge was copious and very offensive. On the same evening he perceived some caraway seeds on the poultice. On examination, it was found that his feces were coming through.

The slip of integument was divided. A chlorine lotion directed, and he was advised to quit the city.

I saw this gentleman twice during the short time he survived; the groin looked cleaner, but showed no sign of granulation: his cough abated for a few days after he left town, but went on afterwards as usual; he gradually sunk, and died the 23d August.

With some difficulty I prevailed on the wife of this individual to permit an examination of the body; and her reluctance to the operation was such as to induce her to sit at the bed-room door, which she insisted on having kept open to prevent my opening the chest. My friend, Mr Adams, assisted me in the dissection.

Necrotomy.—The course of the fistulous canal was included in an angular flap made by a transverse incision, extending from a little above the anterior superior spinous process of the ilium to the *linea alba,* and thence perpendicularly to the pubis.

On throwing down the flap, the omentum was found adhering to the diseased parts, and veiling them completely from view. The omentum was cut across high up, and drawn cautiously down. This exposed the cœcum adhering to the parietes and omentum below, and fixed to the *iliacus internus* muscle behind. A probe, passed upwards through the ulcer in the groin, was felt within the intestine: the direction of the fistula was upwards and backwards, from the superior margin of Poupart's ligament towards the iliac fossa, the extent of its course being about two inches and-a-half.

In order to examine the interior of the cœcum, one ligature was passed round the colon at some distance above the point of adhesion, and another about the ilium about two inches beyond the valve, and the intermediate portion dissected cautiously out. The detached intestine was slit up on its anterior surface; its parietes were found to be thickened, but no contraction of its calibre had taken place. The opening of communication with the fistula was in the lower portion of the cœcum and on the posterior wall, or that which lay on the iliac fossa. It was about half an inch in diameter; the margin firm and irregular; the mucous membrane surrounding it for some extent was thickened and vascular, and several ulcers similar to that which perforated the gut were scattered over the surface for some distance along the colon.

This case would appear to be a form of the disease not hitherto described. Ulceration of the mucous membrane of the bowels has lately engaged a large share of the attention of pathologists. There is hardly any portion of that continuous surface in which it has not been discovered, and the consequences it produces are as various as the situations in which it is found. In the case before us, it appears that the adhesion of the omentum was a protecting process set up by nature to maintain the integrity of the tube where it was invested by peritoneum, and this consolidation was probably strengthened at the period of the formation of the abscess. The effort made to secure the bowel posteriorly was apparently disturbed by some sudden shock while on horseback, and the contents permitted to come in contact with the cellular membrane. A few of the nearest cells once filled by the injected irritant, inflammation quickly followed, a tumour formed, ardent fever set in, and sloughing rapidly ensued.

As a case of artificial anus, supposing the patient to have had no chest disorder, this is obviously one which would have presented great difficulties in the attempt at cure, for no pressure along the course of the fistula could be effectual as long as the ulcers continued in the condition in which they were found on dissection. If then we had a case of artificial anus following a tumour in the iliac region, our first object should be to ascertain the existence or not of ulceration of the mucous membrane as its cause; how far the diagnosis is practicable, we shall consider when comparing the different forms of the complaint with each other, but if we had reason to believe it *did* exist, our first efforts should be directed to promote a healthy action in the ulcers, by improving the general heath, removing irritation of every kind, and by the employment of such local means as were suggested by experience, as likely to promote that effect. It is probable that a weak chlorine lotion injected cautiously might be attended with advantage. Dr Reid, of this city, has found the internal exhibition of this medicine a powerful adjuvant in the treatment of certain stages of fever where ulceration is thought to have taken place.

Having briefly stated my experience in the other forms of this disease, I shall, with as little delay, advert to the inflammation of the peritoneal coverings which supervenes on the affection of the mucous and cellular tissues of the cœcum. It is very probable that most cases of the iliac tumour in which phlegmonous deposits have occurred are accompanied by a certain degree of thickening of the peritoneal coat of the intestine. I have already glanced at the circumstances as well as the practice which prudence seems to require for the restoration of the parts to health. As long as the inflammation is of the mild and limited form which we have hitherto been considering, the constitution will exhibit little consciousness of the morbid change; but should the inflammation, by any accident, or from the violence of the increased action of the mucous surface, be of a more active or diffused kind, we have then a case of peritonitis which demands all our energies to control. Under favourable circumstances, timely and decided measures are often rewarded by success; but it occasionally happens that the disease runs a course too rapid for the powers of the constitution to resist.

In the Archives Générales M. Villermey has published cases of inflammation and gangrene of the *appendix vermiformis*, in which death ensued twenty-four or thirty-six hours from the commencement of the attack. It is remarkable that the disease terminated abruptly at the junction of the appendix with the cœcum itself. In one of these ulceration was discovered in its lining membrane. The symptoms were of that violent and subduing kind which leaves little opportunity for the effect of curative means. Stage succeeded stage with rapidity, and the period of excitement was quickly followed by collapse.

The following is a case in which the steps to the fatal issue were more deliberate. It is chiefly remarkable for the symptoms of mechanical obstruction which occurred during its course, and for the thickening of the mucous membrane about the valve with which this latter symptom appeared to be connected. The notes are extracted from the case book of the Maison de Santé. It was under the care of Sir A. Clarke, and I saw it occasionally in conjunction with that gentleman, and Mr Carmichael, the consulting surgeon to the institution.

No. 5.—*Chronic Peritonitis arising from disease of the Cœcum.*

Thomas Breaky, ætat 15, was admitted on the 14th of March 1824, with the following symptoms. Frequent vomiting of yellow bile; occasional pain in the abdomen referred to the right iliac region particularly. There is great tenderness there, and across the abdomen below the umbilicus; general tympanitic feel; tongue bright red, and feels to the touch as if smeared with gum; pulse 120; dejections green and watery; frequent cough and some yellow expectoration. He is much emaciated, and his features are sharpened and drawn in. The account given of him is that his illness commenced with sick stomach, bowel pains and some cough. He has been declining for the last ten weeks. Fifteen leeches were applied to the painful part; for his exhausted state did not justify more. The abdomen was fomented; saline draughts, &c.

17th.—He complains less frequently of pain; when it occurs the stomach is generally sick; vomiting scarcely mitigated. The *Ung. Hyd. fort.* is rubbed on the abdomen, as the stomach will not bear any medicine but the saline mixture or infusion of mint.

22d.—The gums slightly tender; the pain is considerably lessened; and the dejections are improved; they are light brown; but his stomach is still irritable; *ardor urinæ* troublesome; hectic symptoms are wearing him down.

30th.—Vomiting continues; the fluid is now green; strength still declining; pulse thready, 130.

7th April.—Vomiting stercoraceous; nothing can calm the stomach; *ardor urinæ* distressing; he is sinking; bowels confined. Enemata, &c.

11th.—Stercoraceous vomiting continues; no passage by the bowels; the exhaustion is extreme, and he is scarcely living; skin cold; respiration 26; pulse 160. He died the 12th April.

Eighteen hours after death I was called on to make the examination. The peritoneum lining the parietes, as well as that covering the bowels, was thickly coated with lymph. The intestines were so matted together as to be one mass, requiring much scraping by the scalpel to discover the sulci. Between this mass of bowels and the right lateral parietes there was a collection of about six ounces of dark brown serous fluid, and, at the bottom of the cavity, lying on the iliac muscle, several clots of dark blood. The cœcum was covered with lymph anteriorly, and was much thickened in all its circumference. It was taken out, and the interior carefully examined. Here the most remarkable appearances presented themselves; the mucous coat was thickened and pulpy, but not easily scraped away; the colour was deeper as it reached the ileo-cœcal valve; the mucous membrane at this aperture projected considerably all round; the opening was much contracted in size; the aspect of the valve corresponding to the *intestinum ileum* was equally difficult of passage, but the mucous membrane in this gut was comparatively healthy; there was some fluid fecal matter near the valve.

The liver was healthy in colour and edge; stomach coated with a light pellicle of lymph; little change was evident in the interior; it contained a small quantity of green bile.

The mucous coat of the bladder was slightly vascular.

No material disease in the chest; the parenchyma of both lungs soft and elastic. The expectoration then was from the bronchial membrane, which was of a dusky red colour.

This patient sunk under chronic peritonitis. It would appear that the affection of the cœcum was the primary disease. It was in this situation he first felt pain, and from this point the morbid actions seemed to take their rise; the thickened state of the valve, which resembled very much indeed the appearance of the *rima glottidis* in fatal laryngitis, easily accounted for the antiperistaltic movement of the bowels.

There is a form of chronic peritonitis to which young persons are subject, and which I have no doubt arises, as in this instance, from inflammation of the mucous membrane of some portion of the alimentary canal propagated to the external coverings, and most generally overlooked in the early stages when any thing effectual could be done. The patient picks his nose and it is called worms. This satisfies the friends: the pains are confounded with common bowel pains, and occurring, as I have seen it most frequently, in the fruit season, is not considered deserving of more than common attention. I have thought the phlogosis arose from the imprudent use of fruit and other indigestible matters, in which young persons are too frequently suffered to indulge. The patient wastes away in a state of marasmus, often retaining a keen appetite to the last, although the stomach may be in a state of great irritability, and frequently discharge its contents. During its course the belly now and then fills with fluid; this may generally be made to disappear by urging other secretions. A very peculiar appearance of the abdomen is occasionally produced by effusion of fluid into one side, while it is restrained in the other by adhesion of the parietes and intestines. In most instances the abdomen is flattened before death, and then the parts have a peculiar doughy feel; the bladder is generally irritable, at least when the disease has reached the viscera of the pelvis. The bowel discharges are curdy and mixed with dots of mucus or lymph, and affording little evidence of function. Indeed, I never saw a well assimilated dejection in this disease.

Under appropriate treatment, I have seen many of the prominent symptoms of this complaint subside. The stomach has been calmed, and the occurrence of pain has been seldom or never mentioned. It has appeared as if the diseased action had been arrested and the exalted sensibilities of the parts had slumbered into comparative repose, but the process of nutrition never rallied, and the patient wasted away by steps so slow, and in a condition of such torpor and helplessness, that his death appeared tedious even to those who loved him best.

The remedies which produced the change would probably have done more at an earlier period of the disease. These were leeching, fomentation, and hip-bath, followed by the *Unguent. Antimonii Tartarizati* with the moderate excitement of mercurial action by the ointment. The very general occurrence of *ardor urinæ* should make us cautious in the employment of cantharides * as a counter-irritant in this disease. The application of turpentine to the abdomen, although a severe remedy, is one from which I have seen, now and then, very decided benefit.

When alluding to the employment of mercurial preparations, with a view to the absorption of lymph deposited about the cœcum, or in the substance of its coats, I expressed an opinion that this measure was called for by the fact of organic disease being occasionally met with in this as well as in other portions of the alimentary tube, and by our knowledge of the efficacy of mercury in breaking up diseased actions in their commencement.

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* I have rarely found it necessary to allow a blister to be kept on longer than six hours, and it has frequently happened that the effect has been produced in a shorter time. The stimulus once given, the parts appear to vesicate as well as if the blister was retained, and strangury is thus almost certainly avoided.

The case No. 4, in addition to the ulcerated state of the mucous membrane, exhibited considerable thickening of the peritoneal and cellular tissues. No. 5 likewise showed a remarkable degree of organic change in the substance of the coats of the intestine. In either case the lesion was sufficient to have injured the general health, even if unaccompanied, as in the former instance, by ulceration and abscess, and in the latter by the general affection of the peritoneum by which the individual was destroyed. Indeed, it has frequently happened that life has been destroyed by organic disease of the cœcum without either of these complications. It is not my intention to do more in this place than allude to the fact. On another occasion I may consider the changes to which this organ is liable, either unaccompanied by or previous to the formation of tumour in the iliac region; but I cannot dismiss the present subject without adverting to the remarkable case recorded by Dr Chambers, because, as an instance of tumour in the iliac region, it will be usefully contrasted with the subject of the present paper, and occurring in a very young subject, even if not admitted to be carcinomatous, as Dr Chambers considers it, appears to have been of an especially malignant and destructive nature.

The boy was nine years old, had continued fever about three years before, from which he never perfectly recovered. When admitted into St George's Hospital the abdomen was found to be tender, half-filled with fluid, and the right iliac region occupied by a hard immoveable mass of tumours; the superficial veins enlarged. He survived but a short time. Dr Chambers judiciously conjectures that the foundation of the disease was laid during the fever. The *post mortem* examination disclosed the following appearances.

No trace of inflammation on the peritoneum; a large irregularly-shaped whitish mass was observed occupying the hypogastric right iliac and umbilical regions, and extending up to the inferior surface of the liver. On cutting into the tumour it was found that the interior of the cœcum and ascending colon, of which parts it consisted, were throughout in a state of foul ulceration, whilst the tunics of the intestine, so far as they could be made out in the midst of such disorganization, were enormously thickened and hardened. The thickened and indurated parts had the character of true scirrhus, and the ulcerated surface was studded with processes of malignant growth, and had the common aspect of open cancer. The canal of the intestine was not obstructed, and the diseased surface was smeared with healthy feculent matter. Most of the absorbent glands in the neighbourhood of the tumour were enlarged and indurated, and some of them were in a state of unhealthy suppuration. In many other parts of the intestinal canal, particularly of the ileum, a growth of scirrhous character was observed amongst the coats of the bowel. Some of the glands in the mesentery were enlarged. There appeared also in the cortical part of each kidney the commencement of a disease similar to that in the bowel.

From the foregoing observations it would appear that we may have different forms of swelling engaging the cœcum, and depending on the conditions of that important organ. 1*st*, The painful distension or feculent tumour; 2*dly*, The malignant tumour of the cœcum; and, 3*dly*, The true phlegmonous tumour. Of the latter there appear to be *two species*, of the event of which our prognosis should be very different indeed. The *one* arising from irritation of the mucous membrane, comparatively slow in its progress, and generally yielding to a timely employment of suitable treatment; the *other*, occasioned by ulceration and perforation of the intestine, rapid in its course, very little amenable to remedies, and leading to the formation of artificial anus. To these may be added the case in which the general peritoneum is engaged.

Before the attempt to distinguish these several conditions from each other, it may be well to consider with what other diseases any one of them may be confounded. It is obvious that an early and careful examination of the abdomen is essential to our diagnosis, and will enable us to correct the evidence afforded by the history of the case. We must not be content to pass one hand with a vague and careless pressure over this important cavity. The organs must, if I may so speak, be examined seriatim, and those who know disease best, will agree with me in acknowledging the value of this patient trial in enabling us to detect the early and curable stages of abdominal disease.

I may here observe, that in the examination of the abdomen for this purpose we cannot treat the parts too gently. Where the contents of the abdomen have acquired a morbid sensibility, the muscles are easily thrown into action and spring up to resist any pressure that is made too suddenly or with force. In peritoneal inflammation the degree of morbid action underneath may, with almost certainty, be inferred from the tension of the abdominal muscles. Where the action is excessive they are like a board; and I have more than once remarked the alternations from this state to comparative pliability, which took place in the course of twenty-four hours, at one time yielding after a bleeding, and becoming rigid again in proportion to the degree of pain endured, and the returning heat of the abdominal skin.

Before suppuration is established in the phlegmonous tumour, some obscurity may be expected to prevail. It may resemble an abscess forming in the substance of the abdominal muscles, or between them and the peritoneum; but when we test this conjecture by a cautious manipulation, we find it derives no support from the phenomena before us. Thus, the abdominal parietes, (not the integuments merely, but the entire thickness of the muscles in addition,) can be made to roll across the tumour by alternate pressure at either side; and the pressure which, if lightly made, is unattended by pain, becomes very distressing when continued so firmly and so deeply as to reach the iliac fossa. It may assist us to recollect that this is not the situation where abscess of the parietes generally takes place. Violent exertion of the muscles is usually the exciting cause, and, as far as I have observed, the sheath of the rectus is that in which it is most liable to occur.

Having decided that the tumour is deeper seated, we next consider what proof is afforded of its engaging the psoas or iliacus muscles. The depth of an abscess in these parts will not differ much from that engaging the cœcum; but although the parietes can be made to roll easily over either, the tumour of the iliac muscle will rarely project so much, or be so distinctly circumscribed, as that of the intestine. Bound down by a strong fascia, the abscess of the muscles is forced to take any direction rather than that which would conduct it forwards, and the position of the patient indicates the tension to which it is exposed. He lies with the limb bent upon the pelvis, and, if the inflammation be acute, complains loudly of any attempt to draw it down. I remember an instance of abscess in the muscle, where the principal pain was referred to the groin and knee, and much doubt was felt in the early stage, as to the diagnosis between it and *morbus coxæ*. The torture occasioned by the least movement of the limb threw additional difficulty in the way of its detection;—an abscess formed in the dorsum of the ilium, and the patient gradually sunk. After death the *os ilium* was found to be perforated by matter formed in the iliac fossa, and the joint itself was altogether free from disease.

The movement of the limb is comparatively indifferent to the patient with cœcal tumour, although he may generally lie so as to relax the abdominal muscles. If he stand, he is not so lame as the person with abscess in the psoas or iliac muscle, nor does striking the toe against the wall occasion the peculiarly painful shock experienced in the latter case. The history, too, is less that of *lameness*, and points more distinctly to *derangement of the alimentary canal.* Nausea or vomiting are generally coeval with the pain, while neglected or imperfectly relieved constipation is accompanied occasionally with irritation of the lower bowel, as a consequence of the mischief higher up.

When fluctuation is perceptible in a tumour of this kind, there is less danger of confounding it with abscess in the iliac muscle. In the latter case, the fluctuation is rarely felt through the anterior parietes. The cyst is firmly bound down by the iliac fascia, by which it is flattened and forced towards the femoral ring, in the course of the great vessels of the thigh, and, as in the case above alluded to, is even more likely to occasion caries of the *os ilium*, or reach the loins, than point in the anterior direction.

But suppose we are clear as to the existence of a cœcal tumour, our prognosis will be defective, unless we can be satisfied concerning the particular form of the affection with which we have to contend.

The history of the case will here be found of material assistance. In case No. 1, in which there was little if any error beyond the mere painful distension of the cœcum, the symptoms were more those of irritation than inflammation; and in this case the patient was in health the day before the attack; while in case No. 2, where some organic change had taken place, the individual had suffered pain in the part for upwards of eight days. He had been aware of the irregular state of bowels for a fortnight, and the fever, though mild, was sufficiently marked to point to an inflammatory condition of the parts. No. 3 is perhaps essentially similar to No. 2, but in a more advanced stage, and probably owing much of its untoward and tedious course to the intemperate habits of the subject. No. 4 presents a train of symptoms of much greater severity. The rapid course of this case from the period of the formation of the tumour, the extensive sloughing of the integuments, and the discharge of feces coëval with that of the matter, all indicate the contact of a highly irritating agent with the cellular membrane, and show the free communication of the intestine with the external parts. The occurrence of the tumour had been preceded by fixed pain of long standing; occasional diarrhœa and discharge of blood; and besides the wasting of flesh, he had a peculiar sallow tinge of skin, which belongs more to severe abdominal disease, than to the pulmonary affection by which it was accompanied. From the period at which the tumour appeared, this case is remarkably opposed to No. 3, which is an instance of the ordinary form of abscess about the cœcum. In the latter, the swelling formed slowly, and suppuration was not established before twenty days, even under the excitement of continued intemperance; while in the former, only four days elapsed between the occurrence of the tumour and the discharge of fecal matter at the groin. In No. 3 there was no admixture of feces with the discharge, although there was abundant evidence that a communication existed between the abscess and the intestine. In No. 4, the more extensive destruction of the mucous coat was at once announced by the flow of feculent matter, and a true case of artificial anus was established at the moment of the discharge.

With regard to the relative frequency of the different forms of this affection, although I have seen more than two or three instances of the *feculent tumour* of the cœcum, yet I believe the *phlegmonous* tumour to be that most generally presented for advice. As far as I have seen, males are more frequently its subjects than females, although the sedentary habits of the latter would lead us to expect an opposite proportion. If seen in time, it generally yields to judicious perseverance in local blood-letting, enemata, and warm fomentations. The hip-bath is eminently useful after the application of leeches, and is generally followed by relief. I have reason to think unfavourably of purgatives given by the mouth, and I rarely found them justified by the condition of the stomach.

When there is reason to suppose the canal is exonerated, and the inflammation has received a check, calomel, combined or not with opium, according to circumstances, appears to me highly useful in promoting the removal of the thickening which surrounds the intestine. In one case, where the stomach was more than usually irritable, a poultice of oatmeal was smeared thickly with *Ung. Hyd. Fort.* and laid upon the part. At the end of five or six days the gums were touched, and the case went on well.

Some difference of opinion exists as to the conduct to be pursued at the period when suppuration has manifestly taken place. The question of interference by an operation will be best resolved by the peculiarities of the individual case, locally as well as generally considered. Should the constitution be but little implicated, should there be little symptomatic fever, or sense of general distress, we may and ought to wait the discharge by the bowels; because, in the *first* place, experience has shown this effort of nature to be in most instances sufficient for the purposes of recovery; and, *secondly*, because in attempting immediate relief we may ruffle the calm enjoyed by the constitution, and, by the admission of air into the cavity of the abscess, induce a train of symptoms which no remedy of ours may be adequate to control.

On the other hand, should the general symptoms be even of a kind to solicit relief, we must pause to consider how far the local circumstances will warrant the attempt.—Thus, should the integuments retain their colour, should we have neither œdema nor redness to denote the extension of the sac and its consolidation with the parietes, we cannot prudently interfere. Our incision would probably reach no farther than the cavity of the peritoneum, where we should be arrested, unless, indeed, we exposed our patient to the disastrous consequences inseparable from the effusion of matter into the abdomen.

Dr Cholmely recommends an early opening as the best means of relieving the constitution. But without denying the propriety of an early opening in cases of deep-seated abscess, situated in the vicinity of important parts, I may be permitted to remark, that the rule always supposes the harmlessness of dividing the structures which are interposed. If I understand him rightly, in the only case in which the practice was tried, the attempt to reach the matter by an incision was unsuccessful. Constant vomiting ensued, and the patient quickly sunk. It was afterwards discovered that the abscess lay behind the peritoneum and was untouched, and that the incision had merely given exit to a small quantity of sanious fluid effused from the inflamed peritoneum and omentum anterior to the abscess.

The cases No. 3 and 4, show that we have little reason to expect a pointing directly opposite to the centre of the tumour, the distribution of the local tissues having a tendency to conduct it downwards by a process of prolongation of the cyst. Should the peritoneal lining of the anterior wall of the abdomen become adherent to the sac of the abscess, the cellular membrane between it and the transversalis muscle, lax and delicate in texture, will give little opposition to its descent. In either case we shall probably find it taking a course downwards towards the inguinal canal.

When the tumour reaches the groin, and fluctuation is perceptible, there can no longer be a question of the propriety of giving exit to its contents. Independent of the security we then feel of the safety of operation, we are actually called upon to prevent by a timely opening, its extension in the direction of the pelvis, and thereby save the patient from the recurrence of fever, pain, and exhaustion, which may reasonably be expected to follow the formation of an abscess in a cavity where we could neither guide nor calculate its course.

The question is altogether one of much delicacy, and requiring some share of judgment for its reply. An opportunity will occur when judicious interference may save the life of the patient; but the occasion is to be sought for in a careful review of the daily changes and circumstances of the case.

It will be remarked that, in the course of the preceding observations, I have not thought it necessary to enter into a formal history of the disease in its several forms, nor have I thought it expedient to dwell upon the treatment, further than what is contained in a general outline of the plan. The cases I have presented appear to me to be the most suitable shape in which the former could be conveyed, and the detailed results are not only the best commentary on the treatment, but the clearest index to the mode in which it should be employed. I have avoided as much as possible reiterating what has been before said of either, confining myself to the simple statement of my own experience, and the cautious expression of approval or dissent. In collecting the materials which should regulate our practice, we may and ought to be deliberate, but in conveying them to others it is our duty to be brief.

ART. II.—*Medical Reports.* By D. J. CORRIGAN, M. D., one of the Physicians of the Sick-Poor Institution, Dublin.

REPORT SECOND.

From March 1st to May 31, 1830.

Fevers.	
Febris synochus,	30
—— intermittens,	1
—— infantil. remitt.	2
Diseases of the digestive organs, &c.	
Cynanche tonsillaris,	1
Dyspepsia,	1
Cancer ventriculi,	1
Constipatio,	6
Diarrhœa,	2
Hæmatemesis,	1
Dysenteria,	3
Hæmorrhois,	1
Hepatitis,	2
Splenitis,	1
Ascites,	1
Diseases of the respiratory organs, &c.	
Laryngitis,	1
Catarrhus,	6
Phthisis,	6
Pleuritis,	2
Vitium cordis,	1
Diseases of the brain and nervous system.	
Paralysis,	1
Hydrocephalus,	1
Cephalæa,	1
Mania puerperalis,	1
Neuralgia,	2
Diseases of the skin, &c.	
Erysipelas,	1
Scabies,	1
Variola,	2
Phlegmon,	1
Anasarca,	2
Diseases of the generative system, &c.	
Mammæ scirrhus,	1
Syphilis,	1
Hernia humoralis,	1
Diseases of the joints, &c.	
Rheumatismus,	1
Podagra,	1

THE month of March was, for the season of the year, warm and fine. We had alternate dry and wet weather, and an equable temperature, the thermometer ranging from 50° to 60°, with the exception of two or three days in the middle, and one the last of the month, when it fell to 42°. The wind was very variable,—westerly in the commencement, then from the south-east, but quickly changing again to the west and south-west, from which points it continued to blow until the last three days of the month, when it came from the east. On the 15th there was heavy rain and snow from the south-west. March was, however, on the whole, fine, with none of the biting dry easterly winds usually so prevalent during this month.

April set in with heavy snow from the north-east, the thermometer standing during the day at 40°, and sinking at night to 32°. On the 5th, however, the weather became mild, and continued so to the end of the month, with a remarkably equable temperature, the thermometer generally ranging from 52° to 60°. There were occasional heavy rains and showers of hail. During the greater part of the month the wind was westerly, sometimes, however, from the north-west, when it brought hail with it; and during the last few days of the month, it blew from the south and south-east.

May was stormy, cloudy, and wet; the wind in the early part from the south-west, in the middle of the month from the south-east or west, and in the latter part constantly from the north-west, with heavy mist and fog. The temperature was low, on only two or three days rising as high as 64°; but, although low, it was equable, ranging generally from 54° to 62°.

Among the cases of *Fever* was one which, for its relation to pathology, is worth recording. The French physicians stand high, and deservedly so, as pathologists. Of these Bretonneau and Louis, (the latter in an elaborate work,) have advocated an opinion, that the fever which we know here as typhus has its seat invariably in the abdominal viscera, and that its essential pathological cause is a peculiar disease of the Peyerian glands of the mucous coat of the intestines, to which Bretonneau has given the name of Dotinentherite. This disease of the mucous glands the physicians of this country view as merely incidental to fever, while the writers just quoted regard it as constituting the pathology of typhus. It is of considerable consequence to determine which opinion is correct, because pathology must ever be an important guide to treatment. If we find, as the French pathologists assert, that typhus or bad synochus consists essentially in this disease of the intestines, then the symptoms to which *we* attach value must often, in a great measure, be disregarded, and the treatment of fever, generally adopted in this country, must be considerably modified. If, on the other hand, we ascertain that Dotinentherite is only incidental, then we shall, as we have hitherto done, continue in most cases of fever to regard symptoms, whether derived from the respiratory, digestive, or cerebral organs, as direct signs of diseased actions in the organs, whose altered functions furnish the symptoms.

The case which has given rise to these observations I shall now relate. The patient was a young man of temperate habits. When I first saw him, there was stupor and great difficulty of rousing him from it. His countenance was pallid and congested; the eyes dull, but not suffused, sensible to light, and not pained by it; feet and skin cool; pulse 80, labouring, slow; tongue clean; bowels confined; abdomen soft. His illness commenced ten days before, with lassitude and dull pain across the eyebrows. These symptoms continued with varying intensity up to the morning before my visit, when stupor set in. I took ten ounces of blood from the temporal artery, and ordered his head to be shaved. Calomel was administered in large doses, turpentine enemata were exhibited, and his feet fomented. On the next day there was less stupor; the skin still cool, and covered with small petechiæ; the pulse 84, slow, labouring, and intermittent; the abdomen tender; bowels freed but once; tongue clean. Twelve ounces of blood were taken from the arm, and senna mixture was given. The enemata were continued, and a large blister was applied to the head. The pulse immediately after bleeding rose to 100, lost its intermission, and became free. During the night delirium set in; and on the next day, the thirteenth of his illness, there was intolerance of light and noise, and twitching of the muscles; the pulse was up to 120; skin hot; tongue brown; bowels free, and abdomen tender. Calomel in small doses was given with hippo every second hour. The delirium continued the next day, with, however, an occasional rational answer. The pulse rose to 134, full but vibrating. Stools and urine were passed involuntarily, and the abdomen was more tender, and shrunk. On the day after the symptoms were less urgent; there was less delirium, the pulse fell to 120, and the tongue was clean, but the tenderness of abdomen continued; and on the next morning, the sixteenth day of the illness, death took place rather suddenly, immediately after a quiet sleep of four or five hours.

Twenty-four hours after death the body was examined. The vessels of the dura mater and pia mater were very turgid, and all the large venous trunks were distended with colourless coagulum. The substance of the brain was very vascular, and the ventricles contained four or five ounces of clear fluid. The mucous membrane of the stomach and intestines (speaking generally) was natural in colour and consistence. The mucous glands of the duodenum were enlarged and hardened, so as to give to the finger, when passed over them, a sensation as if small grains of shot were imbedded under the mucous coat. Small ulcerations in great numbers were spread along the internal antimesenteric surface of the jejunum and ileum, and about the *caput coli*. The edges of the ulcers were hard; the mucous membrane around them not inflamed. These ulcers seemed to be the last stage of the disease of the glands, the commencement of which was the enlargement and hardening described as existing in the duodenum.* The question now is, whether the disease of the Peyerian glands in this case was the cause of all the symptoms and of death, as Louis and Bretonneau assert; or whether it was, as we view it here, only an incidental occurrence, and one of comparatively minor importance? The case before us presented, in a very aggravated form, the symptoms of severe brain fever, with the usual typhoid sequelæ, low delirium, brown tongue, quick fluttering pulse, petechiæ and involuntary stools. The symptoms from the commencement pointed to the brain and nervous system; as, for ten days previous to my seeing this patient, he had been complaining of lassitude and dull heavy pain across the eyebrows. The symptoms throughout were of a similar character; and, under these circumstances, perhaps, it may be admitted as further evidence of the cerebral organs being those most directly engaged, that the pulse, which had been only 84, slow, labouring, and intermittent, rose after the second bleeding to 100. The appearances after death coincided directly with these symptoms. There was considerable effusion into the ventricles, and the brain and its membranes were found congested.

Let us now view the case in relation to the French pathology. For the first ten days, the only symptoms complained of were lassitude and pain across the brows, both directly referable to diseased action going on in the cerebral system. The abdomen was not complained of until the eleventh day of the illness, and the bowels up to the same period were confined; diarrhœa the first symptom of the intestinal disease, having been so long absent. On dissection, we find diseased appearances in the brain and in the mucous tissue of the digestive apparatus. We know that the mucous membrane of the stomach and bowels will very often present much more extended ulceration than was found in this case, without producing typhus. Knowing this, we should not, without most convincing proofs, be justified in attributing death to such an alteration of the mucous tissue. On the other hand, we discover in the brain quite sufficient change of organization to account for death. We find that there was no indication of the abdominal disease, until the patient had been twelve days ill, while, on the contrary, the brain furnished symptoms from the commencement. We cannot then with propriety attribute death to that cause which was of shorter duration, and of minor influence. We cannot, it is true, in medicine, have in every instance, demonstration to mathematical certainty of the relation between cause and effect, but we may, in most cases, make probabilities approach very near to certainty; and when we observe in such a case as the one under consideration, that, in one point of view, the symptoms and diseased appearances perfectly accorded, the one bearing out the other, and that in the other, the symptoms and morbid appearances are at variance, we cannot hesitate on the opinion we should form as to which morbid change we should consider the more important, and which we should consider as the cause of the symptoms and of death. It may be objected by Louis and the supporters of his doctrine, that we meet cases in which the inflammatory state of the brain, as observed after death, does not correspond in degree with the delirium, &c. exhibited during life, and that hence the delirium with its concomitant symptoms must depend on sympathy of the brain with the diseased action of some other organ, as for instance of the intestines. This objection is more specious than real. We know that inflammatory or diseased action may have existed in an organ, even to a considerable extent during life, and yet leave no trace capable of detection after death. Of this, we have palpable instances in inflammatory affections of the skin, as in measles and scarlatina; and we have good reason to believe it may also be frequently the same in fever. Moreover, the vascularity of the brain, exhibited by a *post mortem* examination, in the latter stage of fever, is probably very different from what it had been in the early part of the disease when active delirium, &c. were present. We know that in a majority of those cases of fever, in which during life there had been delirium, intolerance of light, and the like, the brain on *post mortem* examination exhibits greater vascularity than natural. In cases, then, which have presented the same symptoms, even though on examination we do not always find a proportionately inflammatory or diseased state of the brain, we may reasonably infer that such had existed.

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* For an excellent description of this disease of the glands of the intestines, *vide* Reports of Medical Cases in Edinburgh Medical and Surgical Journal by R. Bright, M. D. Lecturer at Guy's Hospital.

Weighing all these considerations, we cannot but come to the conviction, that the French opinions are not well founded, and that our own practice of viewing symptoms in fever, (generally speaking,) as direct signs of diseased actions in the organs, whose altered functions furnish them, is better calculated to lead us to an accurate diagnosis and a safe treatment. If we compare the results of treatment, we find little encouragement to exchange our views for those of the French. In our treatment the mortality is from one in eight to one in twelve. From Louis's own account, the mortality in treatment directed by the opinion, that the fever in question has its seat in the Peyerian glands, is one in three.

In making these observations, it has not been my intention to advocate the principle, that every case of fever has its seat in the brain. I believe that sometimes one organ, as the brain, is most engaged, sometimes another. My object has been to show, that in cases of fever, such as the one related, we shall be more correct in closely watching the brain, than in directing our attention principally to the intestines, as the pathology of Louis would induce us to do. While differing from Louis, it is at the same time only justice to observe, that his researches have given us very great information, and that the knowledge of the changes in the intestines, which he has pointed out, is often a very valuable assistant to us in treatment.

Cancer Ventriculi.—The subject of the case marked thus was a man aged about 50. When I saw him on the 18th of April, the symptoms were, loss of appetite, vomiting of food, sometimes immediately after a meal, sometimes not until the expiration of an hour,—and a sensation felt frequently at meals, as if the food stopped immediately on reaching the stomach, and remained there in a lump; this sensation obliging him to rise from table and walk about before he could resume his meal. There was dull pain in the epigastrium on the right of the mesial line, a little below the cartilage of the ribs. The urine was clear; bowels free, and stools bilious and natural. There was no difficulty of lying on either side. The tongue was grey and moist; breathing free; the skin had that roughness which gets for it the name of goose-skin; there was no perspiration; the pulse was 92, soft and weak. The vomiting aud pain in epigastrium were present about four months; and when first felt were very trifling in degree, but progressively grew more intense. At the date of this report, his strength and flesh were much wasted. For three months preceding it, nothing but arrow-root remained on his stomach. For several years preceding his illness, he had drunk freely of spirituous liquors, and from childhood he had been subject to pyrosis. Purgatives were always followed by an aggravation of his sufferings, aud by colicky pains in his bowels. I ordered fifteen grains of Dover's powder to be given at bed-time. This brought good sleep, and on the next day he was quite free from pain. Antimonial ointment was rubbed over the epigastrium, and the anodyne repeated. The ointment produced severe ecthyma, and then food for the first time after a long lapse rested on his stomach. The slightest purging, however, injured him. Some blue pill was added to the Dover's powder, but it acted on the bowels, and this rendered its discontinuance necessary. The relief obtained by the anodyne and ointment was only temporary; the debility and loss of flesh proceeded; thirst became urgent; tongue parched; skin continued harsh and dry; and diarrhœa set in, of abominably fetid bilious stools, which defied all efforts to stop it. Opium in large doses was the only remedy that afforded any relief. On the 3d of May he died.

Post Mortem.—Nearly the entire of the cardiac extremity of the stomach and the greater portion of its lesser arch were thickened and occupied by ordinary cancerous structure in a state of ulceration. For some extent around the ulcerated surface, the lining membrane was hard and scirrhous, of a light-grey colour, and fibrous texture. The larger arch of the stomach and the pyloric extremity were sound, as were also its muscular and peritoneal coats. The stomach contained a considerable quantity of deep orange-coloured glairy fluid. The liver was of natural size, but very soft in its texture; its internal substance and under surface, particularly the left lobe, studded with encephaloid tumours. These tumours were spherical cysts, varying from the size of a pea to that of a walnut, filled with substance of a milk white colour, closely resembling the white part of brain. This substance was enclosed in smaller cysts, or traversed by cellular tissue. It was of various degrees of consistence, from fluid to semi-solid, and in many of the semi-solid tumours the matter was fluid in their centres. The cysts with their contents resembled in every respect, save in colour, cysts of melanosis of the same organ.

This case shows us that we can place little reliance on the diagnostic sign, which (as books have taught us) distinguishes so clearly disease of one extremity of the stomach from disease of the other. It is generally believed that the time when vomiting occurs after a meal will tell us, in organic derangement of the stomach, at which orifice of the organ the alteration of structure has taken place; that, when vomiting occurs immediately after a meal or during it, then the cardiac orifice is the part diseased; that, when the food is retained for some time, then the pyloric extremity is the part affected. This case, however, teaches us, that such a diagnostic sign may be of little value, for although the whole disease was at the cardiac extremity, the food was as often retained for an hour or longer after a meal, as thrown off immediately; it was indeed more often retained for some time. From this, and from the pain referred to the right of the mesial line, I had hazarded an opinion that the pyloric extremity was the part suffering.—This case is also an addition to the many on record, which show how much alteration of structure the mucous membrane of the stomach may undergo and the patient yet survive. It is also remarkable that over the situation of the greater arch of the stomach, where most disorganization had taken place, there was no pain even on pressure. The deep-seated pain complained of on the right side of the mesial line corresponded with that part of the left lobe of the liver, in which there was imbedded a cluster of the tumours of the kind above described.—This case gives us information on another point of practical importance, viz. that with morbid growth in the substance of the liver, even to a great extent, this organ may continue to furnish, to all appearance at least, healthy bile. In this particular, the encephaloid tumour of the liver still preserves its resemblance to melanosis. In a case of this latter disease, in which the liver was occupied, at least to three-fourths of its size, by melanotic cysts, or melanotic matter diffused through its substance, the stools, up to the patient's death, presented a perfectly healthy appearance.—Opium was the only internal medicine that gave my patient relief. Counter-irritants served him so far as to make his stomach capable of retaining food; purgatives invariably produced great aggravation of his sufferings. Had the disease been attended to in time, it is probable that life, by local bleeding, counter-irritation, anodynes, and a regular diet, might have been prolonged for years with little suffering.

Catarrh.—In speaking of the weather, I observed that March was unusually mild, with none of the biting dry north-easterly winds generally so prevalent in that month. The consequence was, that catarrh was rare, and the cases of it very mild. The same may be observed of all the acute inflammatory chest attacks.

Circumscribed pleurisy opening externally.—I may here mention a case that possesses some interest. W. S—— came up to Dublin from Ballina, presenting the symptoms of phthisis in its advanced stage. He had short and high breathing, harassing cough, with copious expectoration and night sweats, loss of appetite and wasting of flesh. About two months before, he had had in the country a severe inflammatory attack in his chest. For this, he had been repeatedly bled and blistered. The acute symptoms disappeared, but those above described supervened. Although all the general symptoms and the history of the case indicated phthisis, the stethoscope denied its existence. The chest sounded well on percussion, with the exception of the anterior central portion of the left side, which had been the part most affected in the commencement of the attack, and respiration in this part was feeble. This part also presented a trifling dilatation, under which there was fluctuation, although very indistinct. A poultice was applied for two or three days; I then made an opening, from which about three ounces of pus escaped. At the second dressing as much more came away. The abscess rapidly healed. The urgent symptoms, cough, expectoration, and night sweats as quickly disappeared, and W. S—— has since enjoyed uninterrupted good health. The local examination of the chest in this case, percussion, and the stethoscope gave valuable information, showing that the empyema was not general, and marking out with accuracy the boundaries of the cavity formed by adhesion of the pleuræ. About the same time that this case occurred, I examined the chest of a patient who died of phthisis. The two pleuræ of one side were united through nearly their whole extent by coagulable lymph, and at the lower part of the lung of the same side, between the two pleuræ, and bounded by adhesion, was a circular cavity, about the size of the palm of the hand, containing three or four ounces of pus. Had this patient not laboured under a disease which proved so soon fatal, it is probable that the collection of pus would, as in the former case, have produced a prominence over it, when an operation would evacuate the matter.

Tetanus.—In the preceding report, I mentioned that I had at the time of writing it a case of tetanus under care. I first saw the patient, Thomas Rooney, on the 28th February. The symptoms were, stiffness of the neck and jaws, and incapability of opening the mouth beyond a very small extent; pain of the left side of the thorax, shooting round from the scapula of the same side to the front of the chest, where it was most intense; and a sensation as if a tightened cord were tied round the lower part of the chest and epigastrium. The pain of the left side of the chest was not increased by pressure on the part, but pressure on the upper dorsal vertebræ aggravated it very much. The intercostal muscles did not act, the ribs were stationary, and respiration was carried on by the diaphragm and abdominal muscles. In speaking, there was incessant catching of the breath. There was great restlessness, and an indescribable expression in the countenance of anxiety and agitation, with strongly marked *risus sardonicus.* The tongue was white and moist; bowels free; skin clammy; pulse 138, hard and small; sleep good. About three weeks before, this patient, in a quarrel, received a fall on his back, but perceived no ill consequence for twelve or fourteen days; at the expiration of which, he felt pain of the left side, and weakness of the left leg; and on these supervened, three days before my seeing him, the pain and stiffness of the neck and jaws. He received in the fall some trifling scratches on the palms of his hands, which healed quickly. Thirty ounces of blood were taken from his arm, a long blister put over the spine, and a purgative mixture administered. On the next day the pulse was 108. The symptoms as before were present, but somewhat less in degree. He had now two grains of calomel and half a grain of opium every second hour, and turpentine enemata. On the 2d March, the intercostal muscles began to act, and the pulse had fallen to 90. The mouth was now sore. The carbonate of iron was given, a teaspoonful every third hour, apparently without benefit, for on the 9th the symptoms had returned. A blister was again put on the spine, after which he rapidly mended; and on the 26th March, about a month after the commencement of the attack, the only remnant of the disease was the *risus sardonicus.*

I have related this case, because as long as opinions are divided on the pathology of tetanus, and treatment of course uncertain, any information, however slight, must be of service. Mr Carmichael has given us, in the Transactions of the King and Queen's College of Physicians in Ireland, a valuable detail of cases of tetanus. He gives six cases; of these the only one that recovered was treated by counter-irritation over the spine, and mercurial inunction. The bodies of two of the remaining five were examined, and the spine was found natural. Mr Carmichael is of opinion that the disease will most likely be found to have its seat in the sympathetic ganglia which preside over the respiratory and digestive organs, and that the other parts affected, as the muscles of the limbs, of deglutition, &c. become implicated by sympathy, or through intimate nervous connexion. For Mr Carmichael's arguments, which carry great weight with them in favour of this opinion, I must refer to the essay itself. Doctor Reid, whose paper on tetanus in the same Transactions possesses great interest, advocates the position that the spinal cord is the seat of the disease; and Doctor O'Beirne, who has had more experience in tetanus than perhaps any other person I could name, brings the weight of his experience to support the same view.* In the Edinburgh Med. and Surg. Journal, Vol. xvi., there is a letter from Dr Sanders to Dr Duncan Junior, in which he speaks in the most positive manner as to the pathology of tetanus. "If the tetanic affection," Dr Sanders observes, "is confined to the jaws, certain nerves arising from the *tuber annulare* and *medulla oblongata* are found in the state above described," (*i. e.* covered with turgid red vessels at their visible origin, or where they appear to set off from the brain, *medulla oblongata* or spinal marrow.) "But if the tetanic affection involves the whole inferior extremities and the trunk of the body as well as the jaws, then the origins of the nerves arising from the *tuber annulare* to the *cauda equina* are covered with turgid red vessels." He says, "I have conducted this inquiry for about sixteen years, and have not met with one exception. Some are of opinion that I maintain that the spinal marrow, its nerves, and membrane, are always affected with turgid vessels in tetanus. This is incorrect. I have examined cases of trismus, in which the spinal marrow, its membranes, and nerves, were almost entirely sound from the atlas to the lumbar vertebræ. In these instances, however, not only the origin of the nerves at the *medulla oblongata*, but the *medulla* itself was inclosed with a close net-work of turgid red vessels." If we succeed in determining the pathology of tetanus, we shall then with much more certainty judge of the relative effects of remedies. The patient whose case has been related recovered; but nevertheless the history of the case itself points out pretty clearly the seat of the disease. An injury of the spine was the cause of the attack; and along with the ordinary symptoms of tetanus, there was a remarkable symptom often met with in cases of spinal irritation. In these, pains are almost always felt about the epigastrium or in one side, and they point out their origin clearly by this, that pressure on some part of the spine will suddenly aggravate them. The case under consideration had this symptom, viz. pain in one side, aggravated by pressure on the spine; and as this came with the symptoms peculiar to tetanus, it is but reasonable to infer that both arose from the same origin, a diseased action going on in the spinal marrow. The case was mild, but still a well marked case of tetanus. The stiffness of the neck and jaws, the *risus sardonicus*, and above all the spasm or squeezing under the edge of the ribs from the epigastrium to the spine, marked the disease too palpably to permit a mistake.* It may be said, the case, although like tetanus, was one in which the symptoms arose from an injury of the spinal marrow. Be it so; but if the diseased action going on in the spinal marrow produced symptoms in every respect resembling tetanus, then we may reasonably infer, when we meet again with like symptoms, that they have a like cause. As corroborative of the opinion that tetanus has its seat in the spinal cord, or nerves connected with it, I may mention this fact. While I was a pupil at Sir P. Dun's Hospital, a boy was brought in who received a severe contusion on the spine by a fall from a height on a ladder. He presented *risus sardonicus* to an extreme degree, and when he had recovered so far as to be able to walk about the wards, it continued, giving to his countenance an expression at once painful and ludicrous.

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* *Vide* Dublin Hospital Reports, Vol. ii. for a valuable historical and medical account of Tetanus, by James O'Beirne, M. D.

In the treatment of the case on which these remarks have been made, the relief given by extensive counter-irritation along the spine was very remarkable. It is true that cases have ended fatally where treatment similar to that in the present instance has been adopted; but this only proves that cases may be too inveterate, as they may be in any disease, for the best treatment. All that we can do in most instances of serious disease, is to ascertain and steadily pursue that treatment which gives us the smallest average of mortality. Dr O'Beirne, whose name I have already mentioned, and who has had great experience in tetanus, speaks highly of tobacco, and has succeeded with it in very obstinate cases. Dr Elliotson, of London, recommends carbonate of iron. If it be satisfactorily established that tetanus has its seat in the spinal cord, it is probable that the most successful treatment will be extensive counter-irritation along the spinal cord, in conjunction with Dr O'Beirne's practice of administering tobacco or some powerful narcotic.

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* "The pathognomic symptom in this variety is the spasm under the sternum, which is perpetually increasing in vehemence."—Good, vol. iii. p. 331.

Cases of irritation of the spinal cord and neuralgia would naturally follow here; but in order to bring them as much as possible together, I shall defer speaking of them until the next report.

P.S.—It is necessary for me to observe, that the lists at the head of these reports contain only the cases that have been under my own care at the Sick-Poor Institution. I noticed this at the end of the first report, but it was omitted from an error, probably on the part of the printer. The Institution has five physicians and a surgeon attached to it.

13, *Bachelor's Walk.*

Art. III.—*Cases with Dissections and Remarks.* By W. Davidson, Licentiate of the Royal College of Surgeons of Edinburgh, Surgeon, &c. to the Lancashire Lunatic Asylum, and formerly House-Surgeon to the Liverpool General Infirmary.

Case of Encephaloid degeneration of an entire hemisphere of the brain.—R. F——, was admitted into this hospital on the 17th of September 1830, when he presented the following symptoms:

Body reduced to the last degree of emaciation; eyes sunk; countenance hollow and haggard; expression remarkably wild, anxious, and indicative of suffering; complexion cadaverous, and of that peculiar clear straw-yellow colour which denotes the existence of organic disease. He has low muttering delirium and somnolency, accompanied with almost constant moaning and raving, puts out his tongue when asked, and appears more intelligent when roused, but relapses immediately on being left to himself. When asked if he feels pain, he mutters, in a hollow tone, the monosyllable "there," placing his hand upon the left side of his head, which feels distinctly hotter than the right. His pulse is 84, and of good strength. In this state he lived until the 30th of September, taking very little food, but occasionally sleeping, for hours together, in a very tranquil manner, when he gradually passed into perfect coma, from which he never recovered. He died on the 3d of October.

Nothing was known of the previous state of this patient, except that he was by trade a blacksmith; that he was in the habit of drinking to intoxication almost daily; and that his intellects became impaired about six months ago. Of the more intimate nature of that derangement, of its progress, or its treatment, we were unable to gain any information. In the dissection, twenty-four hours after death, in which I was assisted by Mr Harrison, surgeon, of Lancaster, and by Mr Owen, assistant curator of the Museum of the Royal College of Surgeons of London, the following appearances were recognized.

Head.—On raising the calvarium, and reflecting the *dura mater*, our attention was first attracted to the adhesions of that membrane to the arachnoid, the opaque and thickened condition of the latter, and the vascular and injected state of the *pia mater*, which was infiltrated with serum throughout, and firmly adherent to the cortical substance of the brain. In attempting to remove the brain from the skull, my fingers penetrated into a cavity in the lower part of the middle lobe of the left hemisphere, where it lies in the cup-like hollow formed by the wings of the sphenoidal, and the petrous portion of the temporal bones.

This cavity proved to be an abscess with undefined and irregular boundaries, greatly exceeding the size of a pigeon's egg, containing partly yellow purulent matter, and partly small detached masses, which appeared to be clots of fibrin. Over the upper portion of this abscess, there was a small ash-coloured indurated mass presenting a rugged knotty appearance, which had many of the characters of tubercular matter in a crude state. On making a longitudinal section of the left hemisphere, it was found to be diseased in a very extraordinary manner throughout its whole extent, and its diseased structure communicating with the abscess above described, by a narrow aperture filled with yellow cheesy matter. Some portions of the mass, particularly at its centre, consisted of opaque, white, homogeneous matter, rather firmer than healthy brain; others again were softer, of a dirty ash-colour, and reduced to a diffluent pulp. The outer parts were more consistent, of a fleshy colour, and contained minute bloody spots, and delicate red lines, converging like radii to a central point, and alternating with whitish parallel filamentous bands similarly radiated.

This curious structure was imperceptibly lost in the diseased mass internally, and except in the immediate neighbourhood of the abscess, was separated from the surrounding healthy medullary substance by a well-defined circle of the same in a state of complete ramollissement, and resembling both in colour and consistence broken down coagulated milk. This circle again was bounded above and externally by the surface of the convolutions, below by the *pia mater*, the cortical substance there being also softened, and by the abscess, and internally by a thin portion of the hemisphere in a sound state, and by the outer walls of the lateral ventricle.* The serous lining of this ventricle was partially coated with a delicate albuminous false membrane, under which it was rough and uneven, and presented an appearance of high vascularity and thickening, the vessels of the *corpus striatum* ramifying beautifully over its surface, as if artificially injected. The *fornix*, the walls, floor, and posterior horn of this ventricle, and the left *hippocampus major*, showed considerable capillary injection, and were of much greater consistence than natural.

The superficial cortical substance of both sides was remarkably firm, minutely injected, of a bright red colour, and adherent throughout to the *pia mater*. The right ventricle was nearly in a natural state. The *pia mater* in the immediate vicinity of the abscess was destroyed by ulceration, and the *dura mater* was spongy and perforated like a sieve, by innumerable small holes, under which the internal table of the skull had suffered from caries.

All the viscera of the thorax and abdomen were healthy, with the exception of the liver, which was greatly enlarged, and adhered to the diaphragm and stomach by loose cellular bands. When cut into, it presented that particular form of organic disease denominated *pale induration with enlargement.*

In this case we have a very striking illustration of the extent to which organic disease of the brain may arrive before it completes the destruction of its victim. I am not aware of any recorded case which bears any resemblance to it, either in extent or in the nature of its morbid structure, unless it be the remarkable one so well described by Dr Abercrombie, at page 339 of his admirable work on diseases of the brain. Nor do I know that the irregular appearance of the surface of the ventricle has been noticed by any writer, with the exception of Gendrin, although it has repeatedly fallen under my observation while examining the brains of insane subjects; and with this pathologist I have found it invariably limited to the arachnoid of the ventricles, and accompanied with other distinct vestiges of inflammation. See a very interesting case by this writer, in which the arachnoid was found injected, (a rare occurrence,) and thickened to an almost incredible degree, in his Histoire Anatomique d'Inflammations, i. 185. Were I to hazard an opinion as to its nature, I should be inclined to regard it as encephaloid texture in its crude state. I am aware that many pathologists would include it under the generic and somewhat vague term of scirrhus; but if my description has conveyed any thing like an accurate notion of its minuter shades, I think the reader will not fail to trace a considerable resemblance between it and that which has been given of the encephaloid tumour by Laennec, of the *fungus hæmatodes* by Hey and Wardrop, and of the medullary sarcoma by Abernethy. In abstaining from an attempt to determine the class of organic lesions to which such a morbid change should be referred, I but imitate the circumspection of Dr Abercrombie, who, in the case already alluded to, appears to have been as much at a loss as I am in this, and who limits himself to a faithful description of the morbid phenomena.

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* The whole of the left hemisphere was converted into a semifluid pulp, mixed with portions of a wine-lee-colour, by a night's exposure to the air.

To this head is perhaps to be referred the following case by Foville; I say perhaps, as his description is too general to enable us to form any exact idea of the minute physical characters of the tumour. "A woman, whose intellects were gradually destroyed, and who at the same time had lost the use of both limbs, was admitted into the Salpetriere. Her paraplegia was then complete, as well as the loss of intellect. She died soon afterwards. The two anterior lobes of the brain were traversed by an encephaloid tumour of a lengthened, irregular form, three inches long, and a little more than an inch in thickness. This tumour being closely contiguous to the surface had altered the shape of the convolutions of the anterior lobe; a sanguineous effusion of recent date existed between the tumour and the cortical substance of the right side; the rest of the brain, the *cerebellum*, the *pons*, and the *medulla oblongata* were in a healthy state."—"Assurément," Foville justly adds, "cette femme n'etait pas aliénée, pas plùs que ne le sont les apoplectiquesque des attaques réitérées d'hémorrhagie cérébrale privent de toutes leurs facultés intellectuelles."—Nouv. Dict. de Méd. et de Chirurg. Prat. Art. Aliénation Mentale.

Case of Pulmonary Apoplexy.—I had scarcely digested the foregoing notes when a patient died in the hospital whose case during the whole of its lengthened progress I had watched with a considerable degree of interest. The history of it with the dissection I shall fully detail, as it presents a form of morbid alteration of unusual extent, and not very frequent occurrence, and exhibits a clear chain of causation in a disease, the pathology of which has given rise to much difference of opinion, and is still acknowledged to be one of considerable obscurity.

R. K. ætat 40, an incurable melancholic patient, was attacked about three years ago with hæmoptysis, during which she expectorated an immense quantity of pale frothy blood from the lungs. These symptoms yielded to the usual treatment, and she enjoyed tolerable health until about four months ago; although from the purple and puffy state of the countenance, occasional palpitation and attacks of dyspnœa, she was suspected to labour under disease of the heart. At that period these symptoms assumed a very alarming character, and became so severe and constant as to attract more attention, when she was carefully examined with the stethoscope, and presented the following phenomena. Contraction of the left ventricle yields a strong impulse and a very clear sound, which are very perceptible over an extent considerably beyond the left precordial region. Sound of the right auricle prolonged and dull, with distinct *bruit de soufflet*. Sound and impulse of the right ventricle scarcely perceptible. General symptoms. Œdema of the lower extremities, purple and puffy countenance, dyspnœa, pulse quick, irregular, wiry, and its weakness forming a remarkable contrast with the tumultuous and violent pulsations of the left ventricle.

Thorax sounds well on percussion, except in the precordial region, where it is distinctly duller than natural. To these signs may be added an unusual enlargement of the subcutaneous veins, cold and livid extremities, frequent cough, and an expression of great timidity, anxiety, and suffering.

The patient is quite incapable of giving any account of her feelings, and maintains an obstinate silence during our inquiries.

Diagnosis. Eccentric hypertrophy of the left ventricle; same condition of the right auricle; that of the right ventricle doubtful. The semilunar valves of the aorta probably diseased.

She was treated with small bleedings, which she bore well, and with digitalis, which seemed to afford relief.

30th October.—She has been suddenly attacked with great prostration of strength, an alarming smallness and intermittence of the pulse, drowsiness, excessive dyspnœa, a look of intense suffering, and every appearance of approaching suffocation.

The chest when struck gives a dull sound, over a space extending from the clavicle to the fourth rib of the right side. Over the same space there is a distinct gurgling, mucous ronchus appearing to proceed from a cavity in the lungs of great extent and filled with fluid. There is a very trifling cough, without expectoration.

Diagnosis.—Pulmonary apoplexy of the upper lobes of the right lung in addition to the disease of the heart. She seemed to rally from this attack for a few days, but on the 11th of November, she had a return of all her alarming symptoms, in an increased degree, to which was superadded a state bordering on asphyxia. The dulness on percussion and bubbling ronchus had now extended down to the sixth rib. Soon after this renewal of the attack she expectorated from the lungs a large quantity of pale frothy blood. From this period every symptom increased with redoubled violence; she continued to disgorge masses of coagulated blood; nothing afforded her the smallest relief, and she died, in a state of complete asphyxia, after enduring extreme suffering, on the morning of the 16th.

Dissection ten hours after death.

Chest.—The surface of both lungs was slightly adherent to the ribs by a few loose cellular bands. The left lung was healthy. The upper and middle lobes of the right lung presented at their surface extensive stains of a reddish brown colour, and resembled in some degree the appearance of that viscus in the second stage of pneumonia. On cutting into its substance the pulmonary tissue, under these stains, was found infiltrated with rather pale coloured blood, and, although crepitant, was decidedly of a firmer consistence than natural. This state of engorgement stopped at that part of the lung, which constitutes the boundary between the middle and lower lobes. On cutting deeper into this tissue, the scalpel very soon reached two enormous cavities, one in the upper, and the other in the middle lobe. These cavities occupied nearly the whole of the lobes, which were completely hollowed out from their centre to within an inch of their circumference, and presented at detached points, the ruins, if I may so express myself, of the spongy tissue of the lungs, and of broken down bronchial tubes and blood-vessels. The former of these cavities was completely distended with at least two pints of grumous decomposed blood, of remarkable fetor, and in a perfectly fluid state: the latter was about half-filled with broken down masses of coagulated blood, which filled a pint measure, and was of a paler colour than that found in the veins, or the right chambers of the heart.*

This organ was three times the size of the patient's fist, and its left auricle was enormously distended with blood. The left ventricle was dilated and hypertrophied to a considerable extent, and its *columnæ carneæ* were much enlarged. The right ventricle was in a state of complete atrophy, with its cavity at least a third of the natural size, lying flattened along the septum, and stopping short at about two inches from the apex of the heart.

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* The pulmonary tissue forming the immediate boundaries of the caverns, was in that of the upper lobe gorged with fluid, sanious blood, in the other, with solid coagula, and in both was broken down into a complete detritus, so as no longer to present its natural alveolar and spongy appearance.

The right auricle was enormously hypertrophied and dilated, its tissue rather resembling that of a ventricle than an auricle, and having in all probability to perform the functions of the contracted and useless ventricle, for which the muscular firmness and solidity of its walls seemed eminently to qualify it.

The ventriculo-aortic orifice was so narrowed by the degeneration of the *corpora sesamoidea* into fibro-cartilaginous masses of the size of a garden pea, and occupying the whole of the free margins of the semilunar valves, which were rendered almost immoveable by it, as scarcely to permit the entrance of the little finger when introduced from the ventricle. The internal coat of the aorta was stained with a deep crimson colour from the ventricle to the arch; but whether this circumstance was the result of cadaveric imbibition or inflammatory action it was impossible to determine, although, from the very short period of time elapsed between the death of the subject and the dissection, I should feel rather more inclined to attribute it to the latter. *

Abdomen.—The liver was simply enlarged, without exhibiting any considerable change in its texture, weighed upwards of six pounds, and extended nearly as far down as the umbilicus, and over the left hypochondrium, so as to occupy the upper half of the abdomen. I thought the pyloric orifice narrower than in the natural state.

Head.—The external layer of the cortical substance was rather paler and firmer than usual, and the internal layer, in several points, was in a state of ramollissement, and of a brick-red colour. The brain was in other respects healthy. The *pia mater* was injected, and adhered at minute points to the convolutions, and the two surfaces of the arachnoid were united together by small albuminous patches about the size of a sixpence.

From the foregoing history it would appear, that hæmoptysis is not a constant and pathognomonic symptom of pulmonary apoplexy, and that this last disease may take place without the former, in the same way as we are taught by almost daily experience that hæmoptysis may occur to a great extent without pulmonary apoplexy. In reviewing, then, the facts of the case, I think we are warranted in concluding, that there were two distinct attacks of apoplexy occurring at two different periods; the first giving rise to the symptoms of internal hemorrhage, but without hæmoptysis, which presented themselves on the 30th of October, and forming the apoplectic cavity discovered in the upper lobe: the last and fatal attack occurring on the 11th of November, succeeded almost instantaneously by hæmoptysis, and excavating the apoplectic cavity of the middle lobe.

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* According to the experiments of Rigot and Trousseau ten hours was a sufficient interval for coloration to be produced by dyeing.—[EDITORS.]

It is impossible to give a moment's consideration to the etiology of this case, without being convinced that the organic disease of the heart, and the apoplexy of the lungs, stand in a closer relation to each other than that of simple coincidence. To me it is clear, that the very first effect of the valvular obstruction at the origin of the aorta, and the consequent aneurism in the left ventricle, which was an evident product of the former, would be to cause a congestion, or rather, as Cruveilhier expresses it, a reflux of blood into the pulmonary veins, and thence into the venous capillaries, next the rupture of one or more of these vessels, and finally, that extreme degree of sanguineous effusion into the submucous cellular tissue, and the air-cells, from the effects of which no human means could have saved the patient.

If I was asked what system of vessels was affected in the foregoing case, I should say the pulmonary veins. This assertion I would build not only on the argument I have already used, but on the appearances discovered by dissection. These are the state of the left auricle distended with coagulated blood, and another equally important phenomenon, which I omitted to mention in its place; namely, a considerable quantity of fibrous clots found in the larger pulmonary veins, and an absence of any thing of the kind in the arterial trunks of the lungs, or the right chambers of the heart. To these I would add the obviously pale colour of the apoplectic coagula, contrasting strongly with several which I found in the *vena cava.*

It is impossible, I think, to conceive that in this case the overwhelming discharge of blood could issue from the surface of the bronchial membrane by a process analogous to exhalation, although in less severe degrees of pulmonary apoplexy, I am not prepared to deny that this does take place, and may alone constitute the disease. On this point, and on many others connected with the pathology of sanguineous and serous effusion, facts are wanted in the present state of our knowledge.

In other cases, again, the heart may be in a state the very reverse of that which has just been described,—that of active aneurism of the right ventricle without valvular obstruction, in which condition of the right cavities we should expect to have hemorrhage from the pulmonary arteries or exhalants, in consequence of the excess of impetus given to the circulation through the capillaries. In such a case it would be as easy to trace an intimate bond of union between the morbid cause and its product, as in the one which I have detailed.

In regard to the rationale of the proximate formation of this disease, I observe, that, when the extravasation is inconsiderable in quantity, and from the minute capillaries, it coagulates in the bronchial cells, without giving rise to their rupture, and forms an intimate union with the alveolar tissue of the lungs, so as to give it the appearance of red hepatization.

But if, as in the case now before us, the extravasation result from the giving way of one or two of the larger branches, and should be of that overwhelming description which the delicate air-cells are incapable of resisting, their parietes must necessarily give way, and the blood will rush from one torn vesicle into another, till a cavity is formed capable of holding several pints of blood.

Cruveilhier has furnished us with a coloured engraving of this morbid alteration,* no less remarkable for beauty of execution, than the very faithful impression which it conveys of the disease. The case from which the drawing is taken, was accompanied with active aneurism of the heart, and a contraction of the left auriculo-ventricular foramen, and I am glad that that gentleman's views of the sequence of the morbid phenomena are in direct accordance with those that I have just detailed.

But he asks, " What is the exact cause, *in all cases*, of pulmonary apoplexy? We are completely ignorant of it. Thus Laennec believes it impossible to explain the sanguineous rupture in hæmoptysis, menorrhagia, &c. without admitting the existence of dilatation of the blood itself. I am convinced that the qualities of the blood as frequently contribute to these hemorrhages as the state of the vascular parietes. The spontaneous hemorrhages of scurvy are proofs of this. But what are these qualities? Let us content ourselves with the facts."—" I have no faith," he adds, " in the supposed pre-existing alteration or ramollissement of the pulmonary substance; the rupture of this tissue is evidently a consequence only."

" The lungs and liver," says Cruveilhier, " are not the only organs which are subject to this spontaneous hemorrhage. I have met with it in every organ; in the skin it constitutes the *purpura hemorrhagica*, as well as the petechiæ of scurvy and of *variola gravis*; and, in the subcutaneous cellular tissue, the spontaneous ecchymoses of the face and other parts of the body.

" *Lastly*, There are many facts which prove the connexion which exists betwen the hemorrhagic cavities of different organs. The most remarkable is the one which was submitted to the *Societé Anatomique* by M. Robert, one of it members. All the organs, the skin, the cellular tissue, the muscles, the brain, the lungs, the spleen, the liver, the pancreas, the uterus, &c. were as it were stuffed with sanguineous cavities. The lungs contained the greatest number; but unfortunately nothing positive could be learned in regard to the symptoms of the case." * In another passage, he states, that Laennec has devoted to this disease a good sized section, which leaves us nothing to regret but the want of particular cases.

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* Cruveilhier, Anatomie Pathologique, Livraison 3.

This, coupled with the assertion contained in a succeeding paragraph, that the etiology of pulmonary apoplexy remains yet to be elucidated, has been one of my principal inducements for entering more into detail in submitting the preceding case and dissection to the public.[*]

The last link in the morbid chain in this case was evidently the remarkably enlarged state of the liver. I will merely advert to this fact in reminding the reader that, notwithstanding enormous hypertrophy, its texture was nearly unaltered. It is extremely probable, therefore, that the increased nutritive action of this viscus was owing to the extraordinary stimulus which it must have derived from the congestion in its *parenchyma* of that venous blood which in the healthy state flows on in a full uninterrupted current from the abdominal and hepatic veins through the centre of the circulating system.[†] Again, in taking a more extended and general view of the morbid appearances detailed, we can, I think, upon the principles of sound reasoning, have no hesitation in arriving at the following conclusions:—That the apoplexy of the lungs formed but a part only of the series of changes which might be reasonably expected to have occurred in an individual presenting such a form of active aneurism of the heart, combined with disease of the semilunar valves, as the unfortunate subject of this memoir; that apoplexy of that organ itself might have been as reasonably looked for; and that, to follow up the morbid chain farther, the same cause might have extended its influence more remotely by giving rise to similar phenomena in the substance of the liver.

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[*] Cruveilhier, Anatomie Pathologique, Livraison 3.

[†] "Le phénomène de reflux ou de congestion," says the eloquent Bichat, "est surtout remarquable dans le foie, où les veines hépatiques s'ouvrent très-peu au-dessous de l'oreillette droite. Voilà pourquoi, toutes les fois que cette oreillette est considérablement distendue, comme dans les asphyxies, et dans les morts où le poumon embarrassé oppose un obtacle au sang, (and he might have added, dans le rétrecissement des valvules aortiques,) le foie est gorgé d'une quantité beaucoup plus grande de ce fluide. J'ai fait constamment cette observation."—Bichat, Anat. Gen. Tome iv. p. 242.

In a case of Andral's mentioned by Dr Abercrombie, in which the patient was liable to severe paroxysms of the symptoms arising from disease of the heart, the liver was felt to become distinctly enlarged during the paroxysms, and to subside again when the attack was relieved by blood-letting.—Abercrombie, Patholog. Researches on Diseases of the Stomach, &c. p. 336.

Art. IV.—*A Case of probable Dislocation of the Heart from external violence.* By William Stokes, M. D. one of the Physicians to the Meath Hospital, and County of Dublin Infirmary, Corresponding Member of the Medico-Chirurgical Society of Berlin, Honorary Member of the Hunterian Medical Society of Edinburgh.

Mr B—— aged 21, had enjoyed uninterrupted health until the 7th of May 1822, when he was severely crushed between one of the arms of a water-wheel of great size, and the embankment on which the axle was supported. Some of his companions had been amusing themselves by entering between the arms of the wheel, and causing it to revolve by their weight; the wheel had been for some time stationary, and he was in the act of following his companions, his legs being already within the body of the wheel, when it revolved. He was thrown on his face upon the embankment, and received a blow from the arm of the wheel, in a line running from the inferior angle of the left scapula, to the top of the right shoulder. On its rebound, he fell within the wheel, from which he was immediately extricated. He remained for upwards of three hours in a state of complete insensibility.

As soon as an examination could be made, the following injuries were discovered:—Two ribs in the lower portion of the left side, the right clavicle and humerus, and the fifth, sixth, and seventh ribs on the right side were broken. The right side of the face and chest was emphysematous, and there was complete paralysis of motion in the right arm, with considerable loss of sensation. The patient felt great pain in the right side of the chest, *with a sensation as if a foreign body preventing respiration had been introduced into the right lung;* the pain was accompanied by violent throbbing and heaving; and it was soon discovered that his heart was pulsating at the right side of the sternum. He had a short dry cough, but experienced no hæmoptysis, and there was no pain or other symptom of pleuritic inflammation at the left side.*

On the day of the accident, free bleeding was twice performed for the relief of the violent pain of the right side, bandages were employed, and in about two days the subcutaneous emphysema disappeared. During the next month he remained in bed, labouring under a short dry cough, always productive of great aggravation of the pain of the side, which on two occasions was so violent, that it was necessary to use venesection. The blood was uniformly inflammatory. At the end of the month he was able to get out of bed, but during the next eighteen months he experienced frequent returns of the pain, calling for the employment of the lancet. The paralysis then began to disappear, and the use of the arm was gradually restored; at first he could only bend the limb, but was unable to preserve it long in the flexed position. He then returned to his studies, but found that he could not read for any length of time, from defective vision, the letters appearing like black lines, though he could still distinguish objects at a distance nearly as well as ever.

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* On this point, so important in the diagnosis of the lesion, the patient is perfectly clear. He states expressly, that since the accident all the attacks of pain have been on *the right side.*

From that period to the present time his symptoms have been the following:—The heart continued to pulsate on the right side of the sternum, the pulsation being generally strong and aggravated by mental emotion, exercise, or the occurrence of pain in the side. He never had orthopnœa, but always experienced great difficulty of breathing on exercise, or when he attempted to lie on the left side. The cough has remained ever since, being always worse in winter. Any unusual exercise, such as rapid walking, has invariably brought on a violent fit of coughing, which is preceded and accompanied by a peculiar mawkish taste, a sensation which remains for some time after the cough has subsided. From the first he has found that if the right hand be plunged in cold water he experiences a strange sensation, which passes up the arm, and is then felt within the right side of the chest; and at the same time the arm is spasmodically brought across the front of the thorax. Hot water has produced the same effect, but not so violently. He also found that any cold substance applied to the right side of the chest produced an extreme feeling of suffocation; and hence on his attempting to bathe in cold water he has always been forced to return immediately.

During the first three years from the receipt of the injury he found that the use of the smallest quantity of meat invariably brought on vomiting in about a quarter of an hour after it was swallowed; the same effect was produced by other food when taken in large quantity, and ever since that period vomiting always follows the use of food, if taken at a time when the dyspnœa is urgent. The act has always been productive of great pain, with a sensation of straining in the right mammary region, and considerable excitation of the heart's action. The pain and straining subside soon after the vomiting is over, but the heart has always continued to palpitate strongly for some time.

His appetite has varied according to the state of his respiration, and hence has been better in summer than in winter.

Certain articles of food and drink produce a great oppression in the chest, with wheezing respiration. Those which he particularly specifies are milk, wine, gum, and sugar. Any article of food or drink taken in quantity invariably produces dyspnœa and palpitation. Since the accident he has every winter experienced several inflammatory attacks, in which he suffers from violent pain in the *right side*, with great increase of dyspnœa and palpitation ; the tongue becomes foul and he is affected with thirst. These attacks are only to be relieved by bleeding, and he now thinks he has been bled upwards of fifty times. The blood has been always buffed and cupped ; and it is a remarkable circumstance, that syncope has never been produced, even after the loss of so much as thirty ounces of blood at a time. These attacks generally last for a week ; but in last November the accession of pain continued for three weeks, which is the longest that he recollects.

In the year 1829, he was advised by an eminent practitioner in this city to try the effects of digitalis. From this remedy he experienced considerable relief, and gradually increased the dose until he could take from six to eight grains of the powder, in a single dose, without the slightest inconvenience. *On one occasion he took so much as ten grains*, and he assured me, that after using the remedy in the dose of eight grains every night for the space of three months, his pulse was never below 80 ; its effect was constantly to relieve dyspnœa and diminish palpitation.

At present, when not labouring under any aggravation of symptoms, his appearance does not differ much from that of a person in the enjoyment of good health. His habit of body is spare but muscular, and the countenance is not expressive of distress. He has a hard sonorous cough, with some mucous expectoration in the morning. In his ordinary state the number of respirations is about thirty in the minute, but this is not the case after exertion or an exacerbation of the bronchitis. Indeed, on the morning when I first saw him his breathing was like that of a person in an advanced stage of laryngitis ; but he then had an increase of catarrh, and had walked some distance to my house. When he does not take digitalis the pulse is generally between 100 and 120, regular in strength, and never intermitting but when he uses the remedy. Its usual frequency is between 80 and 90.

Having stripped the patient, I made a careful examination of the chest. The right shoulder is depressed, but the right side inferiorly is dilated more than an inch.

The left side of the thorax sounds perfectly clear even to its most inferior portion, and in the situation naturally occupied by the heart. Respiration of the puerile character and mixed with some bronchial rales is to be heard over the entire lung, and is as distinct in the mammary region as in the other portions. The sound of the heart is scarcely audible in the upper part of this side, *but neither its sound nor impulse is perceptible below the mamma.*

The upper portion of the right lung sounds clear, but from the fifth rib downwards there is complete dulness, and here the integuments are exquisitely sensible. In the upper portion, both anteriorly and posteriorly, the respiratory murmur is of the same character as in the opposite lung, but from the fifth rib downwards it is wanting, except along the spinal column, where it can be heard feebly. There is no bronchial respiration or resonance of the voice.

The pulsations of the heart can be felt and seen in the right mammary region between the sixth and seventh ribs, and within an inch of the sternum. When not over excited, the sounds of the heart are almost natural, hardly different from those in the healthy state. The impulse precedes the pulse at the wrist by an appreciable interval.* There is no sign of valvular disease.

That the heart is displaced in this case does not, as it appears to me, admit of the slightest doubt. Now the circumstances hitherto recognized, productive of this state of parts, are:—

1st, Congenital malposition.

2d, The existence of an extensive empyema of the left side.

3d, The growth of tumours in the left cavity of the chest.

4th, Pneumothorax of the left pleura.

5th, Dilatation of the air-cells of the left lung.

In addition to these we have two other sources of displacement which are much rarer, hernia of some of the abdominal viscera through the diaphragm, and aneurism of the abdominal aorta,—a cause first signalized by Dr Graves and myself.†

But the displacement in this case can be easily shown to depend on no one of these causes. The patient is perfectly clear on the point, that, previous to the accident, he often felt his heart pulsating in the natural situation; and he was the first to point out to his friends that the pulsations occurred at the right side of the sternum after the injury. I questioned him most minutely on this subject, and he assured me that he frequently, after exercise, used to place his hand below the left mamma to feel his heart beating. Add to this the excellent state of health which he enjoyed previous to the accident, and we cannot suppose that a congenital malposition could have existed. The great rarity of such an occurrence must also be taken into consideration.

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* See a paper by myself and Mr Hart in the Edin. Med. and Surg. Jour. for October 1830, also Dr Corrigan's able paper in the Irish Medical Transactions of the same year.

† See Dublin Hospital Reports, Vol. v.

I am not aware of any case in the records of modern medicine, in which the symptoms of congenital malposition of the heart in the adult have been observed. The cases detailed by Lancisi, where pulsation occurred at the right side of the chest, were examples of dilatation of the right cavities of the heart. Riolan, however, details two cases of pulsation at the right side of the sternum, in which the patient suffered no inconvenience; but the true nature of these cases is not known, while those mentioned by Senac and Bonetus, are examples of effusion into the left pleura.

That the cause of displacement in the present instance is neither a fluid, solid, nor aeriform collection in the left pleura, a diaphragmatic hernia, nor an aneurism of the abdominal aorta, is at once proved by the examination of the left side by auscultation and percussion. I may remark, that a case more illustrative of the importance of these modes of diagnosis could hardly be found. It might be supposed by some that the pulsations at the right side of the sternum were produced, not by the heart, but by an aneurism of the descending thoracic aorta; but this opinion I think untenable, as we know that, when an aneurism of the descending portion of the aorta gives a double pulsation, it must be of great size, so as to press against the heart.* The tumour presenting on the right side, the heart would be pushed strongly against the left ribs, which is not the case here; and I may remark farther, that in such cases we can always feel two separate pulsations, one of the aneurismal tumour, the other of the heart,—a circumstance which is wanting in this case.

We must then admit, that this is an example of dislocation of the heart, with rupture of the pericardium and right pleura,—a supposition which appears to me to agree perfectly with the history of the case and the present state of the patient. Thus we have an example of displacement of the heart from a cause not hitherto recognized. From the history of the case it appears highly probable that the patient has suffered under repeated attacks of pleuritic inflammation of the right lung. A question now arises, What is the actual state of the lower portion of the right thoracic cavity? Connecting the frequent attacks of pain with the absence of respiration in the inferior portion of the right side, it becomes possible that a circumscribed empyema may exist; but the presence of the heart in the right side of the chest, under such peculiar circumstances, of course renders this supposition problematical. As to the dilatation of the side, this may be produced by the heart itself.

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* See Dublin Hospital Reports, Vol. v.

The power which the patient has acquired of bearing such great doses of digitalis is very remarkable. Of course much of this must be attributed to the acquired habit from its long-continued use; but in his case it will be seen that even after taking the remedy for a length of time, the pulse was not brought under eighty beats in the minute. The state of irritation of the heart will partly explain this. How far its displacement is concerned is a matter for future investigation. But the most singular circumstance connected with this extraordinary case, is the fact of the patient, after so dreadful an accident, having lived so long and enjoyed a tolerable state of existence. This renders it probable, that if hypertrophy of the heart exists, it must be slight—an opinion which is borne out by his state at my last examination, when, although he had not used digitalis for many days, the action of the heart was perfectly tranquil.

ART. V.—*Observations upon Indurations of the Omentum, accompanying Strangulated Hernia.* By JOHN BROWNE, M. D. Member of the Royal College of Surgeons in Ireland, one of the Surgeons to the Hospital of St Mark, St Andrew, and St Anne, Dublin, &c. &c. (Read at the Dublin Chirurgical Society, May 10th 1829.)

THAT the omentum, when it has formed for some time either the entire or a portion of the contents of a hernial sac, becomes occasionally very much altered in structure and appearance, is a fact well known to all practical anatomists and experienced surgeons. [*]

But although teachers and practitioners are thus generally agreed as to the changes which this membranous substance may undergo, when so circumstanced, they are by no means unanimous as to the best mode of treating diseased portions of it, during the performance of operations for strangulated hernia.

Sir Astley Cooper says, "if it is very bulky, a part of it should be removed, which may be done by the knife with great freedom, and, if properly managed, without any danger." * Hey is of a similar opinion, observing, that "when, however, it is much diseased, thickéned, and indurated, as it frequently is found to be after remaining any considerable time in a hernial sac, the morbid part should be cut off." † "Some surgeons," says Lawrence, "have recommended that the omentum should be left in the wound; but this practice, which I cannot speak of from my own observations, does not appear to me to deserve recommendation. The omentum left in the wound must be liable to injury, inflammation, or disease. ‡ Since, then," (he proceeds,) "the practice of removing diseased ómentum, § of securing the bleeding vessels, and of returning the remainder into the abdominal cavity, has never produced any injury to the patient, nor is likely to be followed by any ill consequence, it must, in the present state of our knowledge, be considered as the most advisable treatment." ‖

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[*] Pott's Works, by Earle, Vol. 2d, page 47.—Lawrence on Ruptures, 3d edition, page 262.—Dalpech, Précis Elémentaire des Maladies Reputées Chirurgicales, Tome 2e, page 496.—Sabatier, de la Médecine Opératoire, Tome 3e, page 427.—Sanson, edition Ponteau, Œuvres Posthumes, Tome troisieme, page 173.—Schmucker, Verm. Chir. Schriften, V. 3, p. 192. "L'Epiploon perd bientôt dans la Hernie sa figure et sa consistance. Il se tuméfie, devient dur, calleux, se ramasse aisément en un peleton, il s'y forme des tumeurs de toutes espèces." (Richter Traité Des Hernies, page 205. Bonn. 1788.)

The return of the cut surface of the omentum into the cavity of the abdomen without any ligature having been applied to its vessels, is a practice which, although countenanced by some authors, ¶ is by no means advisable, as several patients have perished by internal hemorrhage, and others have run great risk of their lives. ** The application of the ligature to a mass of diseased omentum has produced inflammation of the bowels and death in so many instances,[*] that it has been very generally given up. Even Pott says, "As I am by repeated experience convinced that a portion of the omentum, however large, may be extirpated with perfect safety, without being previously tied, I shall never practise or advise the ligature."[†]

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* On Inguinal and Congenital Hernia, page 32, first edition.

† Practical Observations in Surgery, page 172.

‡ "Quelquefois l'Epiploon est très enflammé, alors il faut aussi le réduire sur le champ: à quoi peut servir le conseil de quelques Chirurgiens qui veulent qu'on le laisse au dehors, qu'on le fomente, et qu'on ne le réduise que lorsque l'inflammation sera pour la plus grande partie dissipée? La fomentation la plus salutaire est la chaleur humide et naturelle de la cavité du bas ventre, et l'Epiploon s'y trouve à l'abri de toute irritation." (Richter, page 213.)

§ J. L. Petit relates a case where death ensued in forty eight hours, by inflammation, from returning a large omental hernia into the abdomen, after it had been irreducible for six weeks. (Œuvres Posthumes Tome 2e, page 349.)

‖ Treatise on Ruptures. 3d edition, page 274.

¶ Caque, in Mem. de l'Acad. de Chir. Tome 3e, page 407.—Sharp's Critical Inquiry, page 35.

** Forestus tells us of a young practitioner who excised a portion of omentum, and returned the remainder into the abdominal cavity without any ligature. The patient died from hemorrhage. (Dom. Pet. Foresti Opera Omnia, 1653. Obs. Chir. Lib. 6, Obs. 7.) Bonetus relates the case of a man who received a blow from a knife on the left side of the belly, two inches from the navel; the omentum, which protruded in a mass as large as the hand, was cut off by a young surgeon, without any ligature being applied to it; in consequence of which, a copious effusion of blood took place into the abdominal cavity, and the patient escaped with great difficulty, being confined for three months with abscesses and inflammation. (Bibliotheca Chirurgica, Tom. 3e, page 112.) Boyer, in extirpating a large mass of diseased omentum, found its arteries much enlarged, so to be obliged to tie fifteen of them. (Traité des Malad. Chir. Tom. 8, p. 141.) And Richter tells us of a similar case in which these vessels poured out six ounces of blood in a moment. (Traité des Hernies, p. 217.)

The opinions of the above distinguished practitioners being so decidedly in favour of excising the morbid part, it is not without surprise that we find the celebrated Scarpa, whose name is deservedly among the very highest surgical authorities, still advocating the use of the ligature, and recommending a practice which, to say nothing of its danger, must, in every instance, be tedious and irksome to the patient.

After stating that he was puzzled by the different opinions of Pott, Arnaud, Pouteau, &c. as to the treatment of enlarged and indurated omentum, he says, "I have for a long time adopted a middle way between these two modes (excision and ligature) of treating the omentum. I have been in the practice of covering all the protruded portion of omentum, with fine old linen spread with simple ointment, or Storax ointment, in order to prevent it, while remaining in the position in which it was found, from again contracting adhesions with the hernial sac, or with the lips of the wound of the scrotum. After the abatement of the symptoms consecutive to the operation, and the commencement of the mucous suppuration of the surface of the omentum retained externally, (which takes place in ten or twelve days after the operation,) I apply a ligature round the omentum in the vicinity of the inguinal ring, which I draw moderately tight during the first days; I afterwards tighten it gradually, until the whole reddish fungous mass becomes livid and black, and is at last completely separated from the sound parts in the vicinity of the ring."[‡]

Scarpa, however, does not tell us whether he follows the plan of Arnaud, who was accustomed certainly to tie the omentum, (when inflamed, very large, or adherent to the sac,) in the vicinity of the inguinal ring, at the same time that he was prepared to cut the ligature on the first appearance of consentient symptoms affecting the stomach and intestinal tube, such as nausea, vomiting, hiccup, and acute pain of the abdomen, especially around the umbilical region; and which sort of secondary treatment we must presume that he adopted in the greater number at least of the two hundred and sixty-five strangulated omental ruptures upon which he operated, as stated in the following gasconade: "De plus de huit cents opérations de hernies, que j'ai faites en ma vie, je crois en avoir trouvé plus d'un tiers avec des Epiploceles; et je puis protester qu'il ne m'est jamais mort un seul malade par la faute de la ligature." *

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[*] Sabatier, Tome i. p. 23.—Lawrence, p. 266.

[†] Pott, Vol. iii. p. 269.

[‡] Treatise on Hernia, translated by Wishart, pages 225—227.

That the ligature did not unfrequently produce the ill effects which might be expected is fully disclosed in a subsequent paragraph of the same work, where he says: "J'ai toujours employé cette methode, et elle m'a toujours réussi, excepté *(mark the word,)* dans des occasions ou j'ai eté obligé de couper la ligature aussitot que je me suis aperçu que l'orage se préparoit, sans m'occuper en vain de saigner ni de médicamenter mes malades. Dés qu'elle est coupée les accidens cessent."

I believe that notwithstanding the high authority of Professor Scarpa, and the boasting of Monsieur Arnaud, most surgeons in this country will be disposed to imitate the practice of Cooper, Lawrence, and Hey, and cut off the diseased mass, securing the bleeding vessels by ligature before returning the remaining omentum into the abdomen.

A few years ago I was called on to treat a case in which a portion of diseased omentum formed a part of the herniary contents. I followed the generally received practice, and with complete success. A contrary mode of treatment in a similar case which fell under my notice was followed by fatality; and, as a comparison of the one with the other may prove useful, particularly to the junior members of the profession, I proceed to relate them.

A respectable farmer, aged 55 years, of middle size, stout make, and general good health, had been liable for eight years previously to reducible inguinal hernia of the right side. Six months before, after constipation, strangulation occurred, and after it had continued for four hours, the hernia was reduced by a practitioner. He observed, after this period, that there was a portion of it as large as a pigeon's egg towards the inner side of the ring, which he could not return; this was soft and unlike the rest of the swelling.

Thirty-four hours before I visited him, after making a violent exertion in lifting a weight, strangulation again occurred. On examination the swelling was found to commence at the internal abdominal ring, and it extended downwards a considerable distance, measuring at least four inches by three. To the touch it was soft and somewhat elastic above, firmer below. There was no soreness on pressure or otherwise, either of the tumour or abdomen. His pulse was 80 and moderate, and all the symptoms favourable.

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* Mémoires de Chirurgie, Tome iie, p. 267.

The usual remedies, such as bleeding, the hot bath, tobacco enema, and cold applications, having been tried for three hours ineffectually, the operation was performed in the usual manner. The hernia was an *entero-epiplocele*, the omentum forming the greatest part, probably five-sixths. It lay on the anterior and outer part of the swelling, was of a pyriform shape, with the base downwards, and adhered below by an additional production from it to the inner part of the sac. It was of a firm consistence, and considerably indurated, possessing little apparent vascularity.

A fold of small intestine, two inches long, and about one inch and a-half broad, lay at the upper and inner part of the sac close to its neck, and rather behind the omentum, which was of a light mahogany colour.

On passing up the fore-finger of the left hand, its point could be just insinuated within the internal ring, the lower edge of which was felt sharp and prominent; and the opening being obviously insufficient to allow of the reduction either of omentum or intestine, the blunt pointed bistoury was introduced on the finger, and the edge of the ring divided, for about three-fourths of an inch, directly upwards.

The diseased omentum was then amputated at its neck, about half an inch from the ring. It was a solid mass, somewhat larger than a human kidney, which it resembled in shape, and weighed three ounces. The divided surface bled little. Five small vessels, which appeared to be veins, were tied upon it with single thread ligatures, which were afterwards cut close. Portions of omentum and intestine, above the seat of the strangulation, being now drawn out, and appearing healthy, the remainder of the hernia was reduced with facility, first the intestine, and then the omentum.

The integuments were brought together by sutures and adhesive plaster, and the usual compresses and bandages employed; after which he was laid on his back, with the knees raised.

The operation was well sustained by the patient, and probably three ounces of blood were lost.

On visiting him twelve hours afterwards, I learned that his bowels had been freely moved by a large dose of calomel, followed by enemas and castor oil; and the aperient effect of these remedies continued on the following day. His fever was moderate; and he recovered under the ordinary antiphlogistic remedies. The wound, however, was not perfectly healed for six weeks; a circumscribed hardness was felt at this time, extending from the upper angle of the cicatrix: this, which was probably a remnant of the indurated omentum, disappeared in a few weeks, and he is now strong and robust.

Contrast this case with the following, which occurred in the practice of an intelligent friend.

A healthy woman, 66 years of age, was operated on for a strangulated femoral hernia of three days continuance, but which had been, for several years previously, irreducible. The hernia consisted of a small fold of intestine, enveloped by a large piece of omentum, at least the size of an ordinary egg, which was much indurated and altered in structure, and adhering generally to the sac. The stricture being divided in the usual way, the intestine, which was of a dark-red colour, but otherwise healthy, was returned with facility. The removal of the diseased omentum was then contemplated, but, after some consideration, it was deemed more prudent to leave it *in situ;* this was accordingly done, the wound being closed by sutures and adhesive straps. The bowels were affected the same evening; and every thing appeared going on well, until the fourth day, when a blush of erysipelatous inflammation was observed around the wound. Considerable constitutional irritation quickly succeeded; the wound became unhealthy; the edges separated; and, subsequently, a gangrenous abscess formed, with extensive sloughing of the cellular tissue.

Free incisions were made through the diseased skin, and wine and cordials were administered, but to no purpose, as death ensued on the ninth day from the operation.

On dissection, the cellular tissue was in a sloughy state; and the omentum, which had been exposed in the operation, was of a dark-brown colour, softened in texture, and presented all the appearances of gangrene.

The healthy state of the abdominal contents was striking, including the portion of intestine which had protruded, and which showed merely a slight degree of constriction at the part corresponding to the seat of stricture.

The general aspect of the omentum likewise was healthy, with the exception of the part adherent to the ring, and continuous with the portion retained in the hernial sac; this presented a very slight degree of redness. The internal ring was completely closed by adhesion, so as to prevent any communication between the internal and external parts in that direction.

There can be no question as to the propriety of imputing the fatality, in this case, to the presence, in the wound, of the

indurated portion of omentum; no epidemic erysipelas, or other assignable cause, existing at the time. Its vitality, under any circumstances small, was probably farther diminished by constriction from the pressure and swelling of the surrounding parts, so that it quickly gangrened; and the putrid matter and gases discharged from it soon extended the same disease to the surrounding parts, predisposed to unhealthy action, from the advanced age of the subject.

That all these consequences might have been prevented by the timely excision of the diseased portions of omentum is made certain, from the almost perfectly healthy state in which the general contents of the abdominal cavity were found, and from the closure of the natural communication between the parts by the adhesive inflammation.

ART. VI.—*A Case of Injury of the Œsophagus and Stomach ending fatally.* By JOHN BROWNE, M. D., Member of the Royal College of Surgeons in Ireland, and one of the Surgeons to the Hospital of St Mark, St Andrew, and St Ann, Dublin, &c. (Read at the Dublin Chirurgical Society, 8th April 1829.)

AS the accident which I am about to relate is one of those which seldom occurs, I am in hopes that its detail may excite some interest, and may induce practitioners to investigate more accurately the phenomena consequent upon the introduction of extraneous substances into the upper portions of the digestive system.

A stout healthy unmarried servant woman, 24 years of age, while breakfasting on her usual meal of stirabout, (*i. e.* oatmeal porridge,) and milk, swallowed a piece of a broken delft plate, which had been inadvertently mixed in the mess. The foreign body pierced the œsophagus on the right side, midway between the cricoid cartilage and the sternum, in which situation it became impacted. She soon afterwards made an ineffectual attempt to excite vomiting, which was followed by the discharge of some blood from the mouth; and a similar kind of discharge supervened upon the passage of a probang, by which she thought the bit of delft was displaced; as she experienced at the same moment a very considerable degree of pain. In the course of the day she made several fruitless efforts to swallow, and passed a restless night from the soreness of her throat.

She came under my care, twenty-four hours after the accident, with the following symptoms. Inflammation and swelling of the external fauces, especially on the left side, in the line of the œsophagus; total inability to swallow; and feverish symptoms. The foreign substance could not be felt externally, and the ordinary probang and that of Cruickshank were both passed with facility. Twenty ounces of blood were taken from the arm; the stomach and bowels were freely evacuated; the cold saturnine lotion was applied to the neck; and the antiphlogistic regimen enjoined.

On the third day, the external inflammation had rather increased, and the feverish symptoms continued; she felt, however, much easier, complaining only of pain beneath the left breast; and she had been able to swallow a little bread and milk. A narrow blister was applied to the neck, and the purgatives were repeated.

On the sixth day, the inflammation had almost entirely subsided, and she swallowed well.

On the eighth, the pulse remained accelerated, but, as all external inflammation and swelling had disappeared, and as she felt otherwise well, she was allowed to go home.

On the eleventh day from the accident, she returned extremely debilitated; complaining of slight dyspnœa, and of pain in the left hypochondrium, beneath the mamma. Pulse 140, and feeble. She stated, that on the day after her return home, she was attacked with pain in the region of the stomach, which lasted for two days, and had been followed the preceding day by the discharge of a pint of dark fœtid blood, by vomiting; and that she had since continued to discharge the same kind of fluid occasionally in smaller quantities. A blister was applied to the left hypochondrium, and some tincture of digitalis administered.

On the twelfth day, there was no improvement; she spat up more than a pint of brown fœtid sputæ; had two dark alvine evacuations, and died at midnight.

The following explanation may be given of this case. The portion of broken plate had, in the first instance, wounded the œsophagus, and the wound had been enlarged by the inconsiderate use of the probang, the same day, applied unfortunately by an ignorant person. It is probable that the extraneous substance was pushed at once into the stomach, from the facility with which I was enabled to pass the two probangs, on the following day. The violence done to the œsophagus by forcing this angular body along its sides, will only explain the attack of inflammation of that part, which yielded to the remedies employed. How then can we account for the subsequent and fatal symptoms?

When we consider the unyielding nature and sharpness of the offending substance, we can easily imagine the possibility of its coming in contact with and wounding some of the vessels of the stomach; more especially, as that organ was at the moment of the accident, and from that period nearly to the time of her death, comparatively empty; in which state a sharp body would penetrate its coats with greater facility. The pain beneath the left mamma, in the hypochondrium of that side, pointed out that the injury had been done to the left extremity of the stomach, near the cardia; where some large branch of the coronary or left gastro-epiploic artery must have been divided, as the quantity of blood poured out was so considerable as to colour the fæcal discharges; and the continued quickness of her pulse, in all probability, was caused by the irritation of the foreign substance, and by a degree of gastritis.

It is to be regretted that there was not an opportunity of verifying the above facts by dissection; and still more so, that the patient did not present herself immediately to a competent person.

It may be asked what would have been the most proper treatment to have adopted, in the first instance, in this case. Not having before met with a similar example,* I must be in a great measure guided by the opinions of others, and therefore make the following observations with some diffidence. All practitioners agree in recommending that soft substances, which are sufficiently bulky to stop up the calibre of the œsophagus, or to impede respiration, should be pushed down into the stomach whenever that can be done; and the same rule may be applied to hard irregular bodies of small size, such as pins, fish bones, &c. which cannot be hooked up: I would not, however, recommend this practice when the irregular substance is large and angular, in short, such as it was in the case before us. The œsophagus was very much injured by the use of the first probang; and we have cases reported, where attempts to extract such bodies as those alluded to have been followed by considerable hemorrhage, or by high inflammation, ending in gangrene.†

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* Since these observations were written, a case somewhat similar has occurred to that distinguished surgeon Mr Liston, who promptly seized the foreign body while lodged in the œsophagus, and was so fortunate as to extract it. Considerable inflammation of the tube supervened, which yielded to leeches and other antiphlogistics. In Mr Liston's case, however, the piece of plate was more within the reach of the forceps than in mine, as one of its angles rested upon the back part of the cricoid cartilage.—(See London Medical Gazette, 1829–30, Vol. i. page 508.)

† De la Borde, Brouillard, et Perrotin, in Mém. de l'Acad. de Chir. T. i. p. 474, 476, 482. Fabricius Hildanus, Cent. 5, Observ. 35.—Ephem. Curios. Nat. Dec. 3, Ann. i. p. 129.—Stalpart van der Wiell. Cent. 1. Obs. 21.

Several distinguished surgeons likewise discountenance such efforts,[*] so that, presuming the body to have been fixed in the first instance, I see no reason why it might not have been cut upon and extracted. No doubt, when we consider the anatomical relations of this tube, such an operation must be regarded as extremely formidable; but there is nothing to be apprehended from the mere division of the gullet, for there are very many examples of wounds in this part from various causes, almost all of which healed kindly;[†] and the operation of œsophagotomy, in the few instances in which it has been performed, has been successful.[‡] Modern authors also speak not only of its practicability, but also of the ease with which it may be performed.[§] No one would think of allowing a foreign substance to remain in such an unnatural situation, and rely upon the efforts of nature for a cure; the danger of such practice having been made apparent in many instances.[||]

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[*] "Des suites aussi malheureuses sont rarement le résultat du séjour pur et simple d'un corps étranger, mais presque toujours dès qu'un accident de cette espèce survient, on s'empresse d'exercer des manœuvres mal-entendues, violentes, dirigées sans intelligence, et par des mains inhabiles; d'où résulte le développement prématuré d'une irritation considérable, qui rend tout à la fois le déplacement du corps étranger plus difficile, et son séjour bien plus dangereux."—(Delpech, Précis Elémentaire des Maladies Reputées Chirurgicales, Tome iie, page 55.) The same celebrated practitioner, in the same work, a little farther on, observing upon such practices, terms them "Des procédés d'extraction pleins d'incertitude, et dont l'expérience a démontré les dangers." M. Hevin, speaking on the same subject, alludes to the dangerous effects of disturbing pieces of glass or stone, substances not very different from delft. He says, "Combien aussi doit on être attentif au danger qu'il y aurait de débarrasser l'œsophage en chassant ces corps dans l'estomac?—Nous devons rapporter à cette classe de corps étrangers, les aiguilles et les épingles, les noyaux aigus de differens fruits, *les morceaux irréguliers de verre ou de pierre*," &c.—(Mém. de l'Acad. de Chir. Tome i. p. 444.)

[†] Mém. de l'Acad. de Chirurgie, Tome i. page 589.—Hennen's Surgical Observ. p. 364, Second Edition.—Works of B. Bell, Desault, Paré, Habicot, Dionis, Garengeot, and many others.

[‡] See cases reported by Guattani and Goursauld, in a paper by Morand, in Mém. de l'Acad. de Chirurgie, Tome iiie, p. 351.

[§] Sabatier, after recommending bronchotomy where the body is large, and presses on the trachea, so as to interrupt respiration, says, "Si quoique d'un volume moindre, il est fortement retenu dans le lieu qu'il occupe, et qu'il fasse saillie au dehors, il est possible d'en débarrasser le malade en faisant au cou une ouverture qui pénètre jusqu'au dedans de l'œsophage, et qui permette de l'extraire."—"Au reste, il est à remarquer que l'ouverture de l'œsophage n'est ni aussi difficile ni aussi dangereux qu'on a cru, et *qu'avec des connaissances anatomiques précises on peut toujours parvenir facilement jusqu'à cet organe.*"—(De La Médecine Opératoire, Tome ive, pages 49, 50, Sanson's Edition.) Delpech also speaks favourably of it, but recommends it to be done in time.—(Précis Elémentaire des Maladies Reputées Chirurgicales, Tome ii. p. 61.)

[||] Pipe-stoppers engaged in the œsophagus have caused dangerous symptoms, and even death.—(Mém de l'Acad. de Chir. Tome i. p. 468.—Stalpart van der Wiell. Cent. 1, Obs. 21.) And portions of bones allowed to remain there have induced abscess and death.—(Archives Générales, Mars 1828.) Guattani gives us a case where death ensued from the impaction of a boiled chestnut in this tube; on dissection a large abscess was found, with a gangrenous communication between the larynx and œsophagus.—(Mém. de l'Acad. de Chir. Tome iiie, page 353.)

As to the treatment of the case in the second stage, or after the delft had been forced into the stomach, the line of practice is not quite so clear; surgical writers being of opinion that little can be done under such circumstances.[*] Multiplied, indeed, are the cases in which foreign substances of all sorts, shapes, and sizes, have remained in, or been discharged from, the stomach, without almost any apparent ill effect having been produced;[†] in other instances, such bodies have made their way through various points of the abdominal walls by inflammation and abscess, and the patients have recovered equally well.[‡] Many such cases do, however, in the end, terminate fatally, but this is chiefly where the extraneous substances have been numerous and of large size.[§]

Delpech says, " On a vu un marron, un noyau de pêche causer une gangrène mortelle."—(Précis Elémentaire, &c. Tome iie, page 55.) M. Hevin, after narrating instances of fatality from the presence of balls, rings, &c. in the gullet, thus proceeds, " Si les corps qui peuvent être enfoncés dans l'estomac, avec le moins de danger, produisent, quelquefois, des effets aussi fâcheux que ceux que nous venons d'exposer, combien, à plus forte raison, doit on craindre les désordres que peuvent causer les corps durs qui s'arrêtent dans l'œsophage, et qui par leurs figures angulaires, inégales, ou tranchantes, sont capables de piquer, de couper, ou de déchirer les parties qu'ils touchent."—(Mém. de l'Acad. de Chir. Tome i. page 462.)

The following valuable observations on this subject are from the new edition of Sabatier's " De La Médécine Operatoire," published by Sanson and Begin, under the correction of Dupuytren, many of whose opinions and cases it contains.—" Quelques personnes ont proposé d'abandonner à eux-mêmes les corps étrangers arrètées dans l'œsophage, et qui, à raison de leur forme, ne peuvent etre retirés sans de trop grandes difficultés, ou poussés dans l'estomac sans occasionner de violentes douleurs. On trouve dans les Mémoires d'Hevin plusieurs exemples de la sortie de ces corps à travers des abscès dont ils avaient déterminé la formation. Mais il n'est pas toujours sage de compter sur un aussi heureux événement. M. Dupuytren a vu l'œsophage enflammé par la présence d'un corps étranger, contracter des adhérences avec la trachèe-artere, et s'ouvrir dans ce conduit, de telle sorte, que le malade rendait par la toux la plus grande partie des alimens et des boissons dont il faisoit usage. Il est presque inutile d'ajouter que la mort fut le résultat d'un désordre aussi grave. M. Dumoustier Chirurgien Major à l'hôpital de Saint Omer, a recueilli l'observation d'un homme chez lequel un os arrêté dans l'œsophage détermina l'adhérence de ce conduit avec l'artère carotide, dont l'ouverture détermina une hémorrhagie subitement mortelle. Il faut donc, dans les cas qui nous occupent, ne rien négliger soit pour extraire le corps, ce qui est le plus sûr, soit pour l'enfoncer, opération qui laisse fréquemment aussi le sujet exposé à de grands dangers."—(Tome iie, p. 54.)

[*] " Les secours qui sont au pouvoir du praticien, en pareil cas, se réduisent à peu de chose."—(Delpech, Tome iie, page 67.) " L'art n'offre point de ressource contre les accidens qu'ils occasionnent."—(Sabatier, Tome iv. page 49, Sanson's Edition.)

[†] " On a vu une boucle de soulier qu'un enfant avait avalée en jouant, sortir par les selles; un petit couvercle de fer blanc qui etait tombé dans l'estomac d'un autre; une flûte de cent huit millimètres de long; de longs fragmens de lames d'épée; des lames de couteau entières; une fourchette; une cuillère d'argent; être rendus aussi par l'anus, à des époques différentes."—(Sabatier, Tome iiie, page 24, Seconde Edition.)

[‡] See cases reported by Benivenius.—(De Abd. Morb. et Sonat. caus. cap. 10.) Bartholinus.—(Cent. 6, Hist. 99.) Dorstenius, (Ephém. Dec. Ann. 3. Obs. 39.) and Raysch, (Ob. Med. Chir. Observ. 55.) in the Medical Acts of Berlin, (Dec. i. Vol. vi. p. 73.) In the Philosophical Transactions for 1696, (Page 219, Article 2,) and in the Memoirs of the French Academy of Surgery, (Tome i. p. 44.)

[§] In the Philosophical Transactions, the case of an idiot boy, aged thirty-three

Upon the whole, as the chances are at least equal, I see no better plan, in such a case as that which now occupies us, than to endeavour to act upon the inorganic substance by chemical agents, as has been done with success in other instances;[*] the variety of diet advised by Sabatier might also be tried.[†]

In those cases in which large bodies, such as knifes or forks, have been introduced into the stomach, through design or accident, the operation of gastrotomy may be safely performed. Of the success of this operation several cases are recorded, in which knives eight or ten inches long were extracted.[‡] And in a very late instance of a lady, at Lyons in France, who swallowed a silver fork, this mode of treatment was had recourse to, and the wound healed in twenty days.[§]

Discharges of blood from the stomach are seldom produced by mechanical causes; nevertheless, a few examples of this sort are related.[||] In these instances the offending substances were of a sharper nature than in our case, such as pins, blades of knives, &c. and the result was almost uniformly unfavourable.

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years, is mentioned; in whose stomach thirty-eight pieces of various hard substances, and among them two compasses and a knife, were found; he had vomited and discharged blood per anum, six weeks before his death.—(See Jones's Abridgement, Vol. v. page 278.) The case of a galley slave is likewise recorded, whose stomach contained a piece of a stave nineteen inches long, twenty-two other pieces of wood, and various other substances.—(Dictionnaire Des Sciences Médicales, Article Cas Rares.) We all recollect to have heard of the famous knife-eater, who died in Guy's Hospital some years ago, and in whose stomach twenty or thirty portions of knives in various states of dissolution were found. These unnatural inmates had at first caused only slight occasional colic, but proved fatal in the end, by irritation and marasmus.—(Medico-Chirurgical Transactions, Vol. xii. part first.)

[*] Edinburgh Medical and Surgical Journal, Vol. xvi. page 46.

[†] "On peut bien faire prendre des substances huileuses et mucilogineuses, et faire user au malade de bouillies qui, relâchant les parties, et qui enveloppant ces corps, en émoussent en quelque sorte les aspérités; peut être ces moyens ont-ils quelquefois favorisé leur sortie."—(De la Médecine Opératoire, Tome ive, p. 57, Sanson's Edition.)

[‡] Ephémérides, Dec. 2, Ann. 10, Cent. 9. L'Histoire de Prusse, Partie 2.

[§] Rapport Des Travaux de l'Academie Royale de Médecine de Bordeaux, Ann 1828.

[||] Acts of the Medical Society of Berlin, Vol i. page 53. Bayle in Nouvelles de Republique de Lettres, Article 10e. Bonetus, Sepulchretum Anatomicum, Lib. 3, sect. 44.

Art. VII.—*A Case in which a Nose was Supplied.* By Maurice Collis, A. B. Member of the Royal College of Surgeons in Ireland; one of the Surgeons to the Meath Hospital, and County Dublin Infirmary, &c. &c. &c.

Operations performed to supply parts which have been lost by disease or accident in different places of the body, are now so well known to have succeeded, that it would be only uselessly occupying time, and wearying the patience of the reader, to insist at large upon the general principle that such may be fairly attempted under particular circumstances.* I shall therefore be very brief in any remarks which I shall make, and shall content myself principally with the description of the particular case which forms the subject of this paper, and the operation performed for the purpose of relieving the unpleasant and disgusting deformity produced by the loss of the nose. Such operations have been frequently undertaken, and various degrees of success have followed. In order to insure a tolerable degree of success, it becomes necessary that the new parts should be in a healthy state, and possess a sufficient depth of substance, and, moreover, should be endued with vitality sufficiently active to carry on the circulation in their new position. The chance of success will also be much influenced by the nature of the accident or disease which has caused the destruction of the original part; thus, if the loss arises from a simple wound in a healthy individual, the chance of success will be much greater than when it arises from a disease which has gradually or rapidly destroyed the organ by ulceration. It will not require any great stretch of reflection to understand this. In the first, there is generally a soft, healthy, cicatrix, around the edges of the wound; in the second, the edges become callous, white and thick, and the hardness extends to a greater or less degree into the surrounding integuments. In the first, a superficial excision of the edges, where the vitality and circulation are sufficiently active, is all that becomes necessary, in order to induce such an action between these and the new parts as will almost insure success. In the second, a considerable portion of the edges must be removed, or even of the surrounding integuments, before arriving at a surface which can be depended on. Peculiarities in the constitution of the individual to be operated upon will also influence the success of such an operation. A healthy young subject will, of course, be a more favourable one for such an attempt, than one advanced in years, or one in whom any specific disease is present. The operation will frequently fail, or be followed by unpleasant effects, when performed upon a subject predisposed to inflammation, and particularly erysipelas. Care should therefore be taken, previous to this, as well as every other serious operation, to get the patient's health into as good a state as possible previous to undertaking it. The digestive organs, in particular, should be previously well attended to, and all febrile symptoms and irritability should be first subdued, and the mind cheered and supported by every means in our power. Having laid down these few preliminary remarks, which might be usefully extended to a much greater length, if the subject had not been previously considered by other writers, I proceed to the case more immediately before us.

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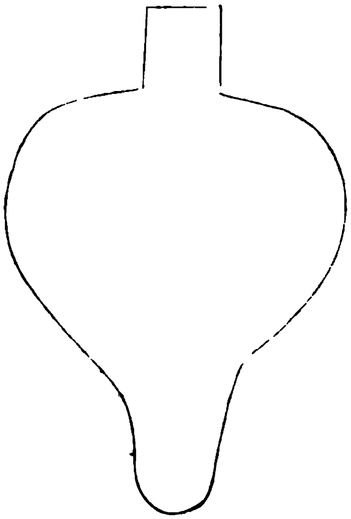
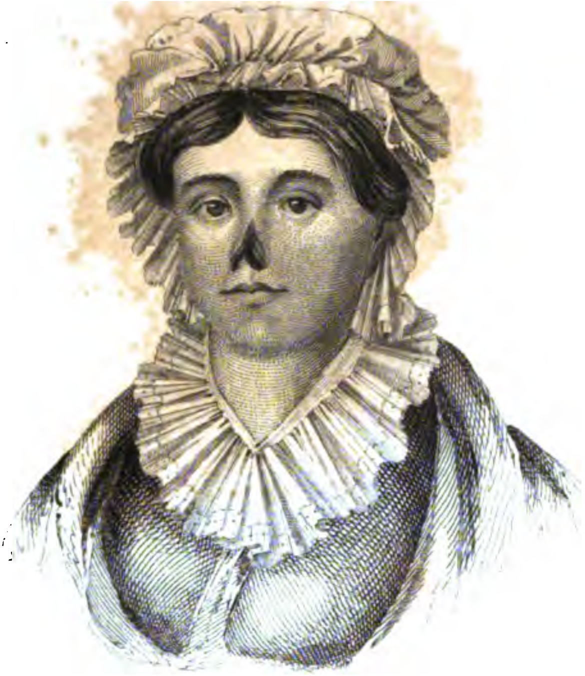
* Observations on the restoration of noses, lips, urethra, &c. H. Earle, Carpuc, Liston, &c. &c.

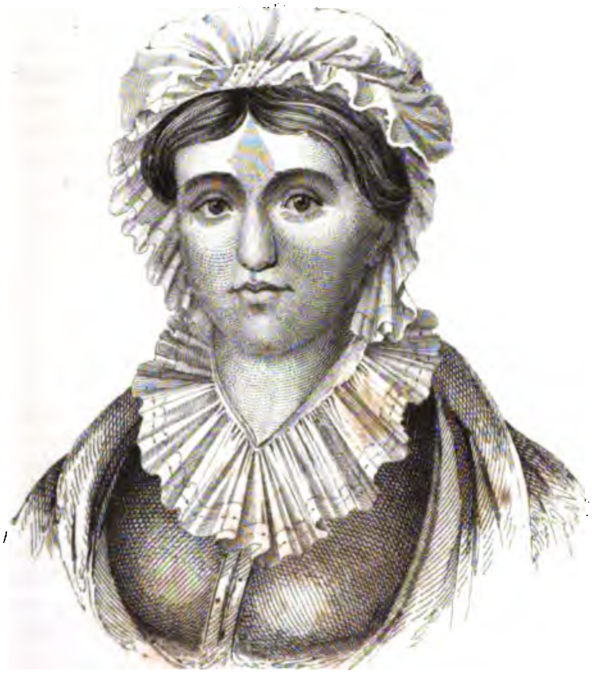
Alicia Syme, æt. 19 years, of a low stature, and rather robust, descended of a scrofulous family, had measles when about four years of age; shortly after which period she was attacked with a species of herpetic ulceration, which extended over a great part of her face, and completely destroyed the *alæ nasi*, with the cartilaginous, and part of the bony, septum. She was about nine years of age at the time the nose was destroyed, since which period there has not been any ulceration upon the edges. She says that about six years ago something was extracted from her nose, which, from her description, appeared to be polypus, or some other growth from the mucous membrane. She first applied to me for relief of chronic inflammation of both eyes, which was in a short time relieved. Just at this time I had been reading Mr Liston's case, recorded in Volume 28th of the Edinburgh Medical and Surgical Journal; and having laid before this woman the reasons why such an operation might be attempted to supply the loss of her nose, as well as all the objections against it, and having given her Mr Liston's case to read, I left it to her own decision to submit or not. After considering it for some time, she called on me, and requested that I would perform the operation. Having given her some mild alterative medicines and gentle purgatives for some days previous, I proceeded to the operation on the 21st August, in the presence of many practitioners in this city, and the pupils of the Meath Hospital. The following are some of the leading particulars of the operation. Having placed her in a chair of a convenient height, with the head properly secured by an assistant placed behind her, I stood opposite to her, and commenced the operation, by first removing a fold of the edge of the integuments which covered the lower extremity of what remained of the nasal bones; this I laid hold of in a hook. I then proceeded from this point to remove the edges of the opening of the nostrils, at each side as low down as the original nose extended, along the margins of the nasal processes of the superior maxillary bone. I was obliged to remove those edges rather deeply, on account of their thickened and callous state. I then detached a small portion of integuments from the centre of the superior part of the upper lip, to which I purposed to attach the new septum. The next step of the operation was to provide substance for the new nose; and for this purpose I applied, after Mr Liston's plan, a piece of strong white leather of this shape to the forehead; and with a scalpel I marked all around it the portion which I intended to remove. Having done this, I dissected off the flap, commencing above; (and here I was obliged to pass into the hairy scalp.) I dissected this flap as deeply as possible, without, however, injuring any important parts. I found great difficulty in making the lower slip sufficiently long to allow of its being twisted without danger of strangulation. This difficulty arose from the forehead being particularly low. However, by passing down rather lower between the brows than would in other cases be adviseable, I succeeded in making the neck sufficiently long and thick, which I carefully twisted and applied the flap at each side to the edges of the nostrils, from which I had previously removed the callous integuments. Three ligatures on one side, and two at the other, kept the parts in close contact. A considerable difficulty arose about securing the centre slip. I passed a ligature through it and the lip, but it was not sufficiently firm to retain it in its place. It was, however, afterwards secured by driving a small glover's needle through this and the lip into the bone. I now passed into each nostril a large quill, surrounded with some white wax, sufficiently large to keep the new nostrils expanded. A small compress of lint, steeped in spirits and water, was now laid at either side of the nose, and the whole retained by one strap of adhesive plaster, so applied as not to make any pressure upon the new organ. The edges of the wound in the forehead were now approximated as closely as they could have been, and were retained by adhesive straps and bandage. She was put to bed,



Edin^r Med. & Surg. Journal Vol. XXVII.

M^r COLLES'S CASE
of Restoration of the Nose.





Lizars sculp^t

and got thirty drops of laudanum. She suffered a good deal of pain during the operation, and was excessively irritable and unsteady.

7 P. M.—Considerably agitated; much nervous anxiety and restlessness; headach and vomiting. A pill of a grain and a half of calomel, and half a grain of opium every fourth hour.

22d.—Had two hours sleep. Took four pills. Still much agitated; it is almost impossible to keep her in bed; complains of headach and vomiting. A purging enema to be administered immediately, and the saline mixture occasionally during the day.

7 P. M.—Complains of nausea, and great pain and tenderness in the abdomen increased upon pressure; the belly is swollen; pulse 98; had two slight motions.

℞ *Infusi Rosarum* ℥viii. *Sulph. Magnesiæ* ℥i. *Acidi Sulph. Diluti* ʒi. *M. Sumat* ℥iss. *3tia quaque horâ ad alvi solutionem.*

23d.—Vomiting ceased; is much more composed; no tenderness in the abdomen; head feels hot, but less painful; had five or six motions; pulse 90. The temperature of the new nose the same as that of the surrounding parts; it appears swollen, red, and shining. I dressed the forehead, which looks well.

24th.—Did not sleep much. She is calm; pulse 90, soft; bowels moved four or five times; very trifling headach; no vomiting. The forehead was dressed, and the compresses removed from the sides of the nose, when the lips of the wound were found united evenly. Temperature of the nose a little lower than that of the surrounding parts. The circulation, however, in it is sufficiently active. The saline mixture during the day.

7 P. M. Complains of pain and heat in her right cheek and eye; pain in the head, and a slight blush of red upon the cheek; she is restless and thirsty; pulse 120, and full.—Twenty ounces of blood drawn, and the following mixture ordered.

℞ *Aquæ Cinnamoni, Aquæ puræ sing.* ℥iij. *Antimonii Tartarizati gr. ij. Syrupi* ℥ss. *Spt. Lavand. comp.* ʒi. *M. Sumat Cochl. amplum (*℥*ss.) omni horâ.*

25th.—Right side of the face affected with erysipelas, pulse 110, and hard; skin hot, headach, &c. *Applicetur lotio Subacetatis Plumbi faciei, et sumat statim bolum è Jalap. et Scammon. āā gr. x. Calomel gr. v.; et alvo soluta resumatur mistura Tartratis Antimonii.*

7 P. M. Inflammation extending; three stools; was kept in a constant state of nausea during the day; pulse quick and hard. *Venesectio ad* ℥*xvi. et applicentur Hirudines sex faciei.*

27th.—Inflammation lessened; pulse more soft; tongue clean;

three stools. Continue the solution of tartar emetic at greater intervals of time, and apply a poultice to the forehead.

28th.—Restless night; bowels open; nausea and vomiting. Omit the tartar emetic, and take the effervescing draught during the day. I removed one of the plugs which was causing much uneasiness. Ordered an anodyne draught with twenty drops of the acetous laudanum, h. s.

29th.—Restless night; more free from fever, and the inflammation is subsiding; the forehead suppurating kindly. Removed the second plug and all the sutures; dressed the forehead with adhesive straps; effervescing mixture during the day.

Sept. 13th.—Since the last report all has been going on well. The wound in the forehead is closing fast, and the new feature is united in all parts except a small portion, about a quarter of an inch in extent on either side. The application of the nitrate of silver to those spots, which seemed to have some tendency to ulcerate, caused them rapidly to heal.

I purposely omitted to publish this case for some time, in order to ascertain decisively whether the circulation would be carried on in the new feature, and whether the cold of winter would produce any effect. For some months after the operation, the new nose presented a most curious contrast to the other parts of her face. It was particularly white; and her cheeks were, from the effects of former disease, very red, so that it was impossible to look at her without laughing. It is now otherwise. The nose has become more red, and she says that she possesses as much sensation in the part as in any other portion of her face. The nostrils have contracted very much, but they are sufficiently wide for respiration, and for giving exit to mucus, &c. I was not obliged, subsequently, to divide the neck of the flap, as is usually done, as it lies perfectly flat. The mark in the forehead is really very trifling when we consider the extent of wound which was made there; and the red colour of the cicatrix is daily lessening.

Art. VIII.—*A Case of insidious and violent Inflammation and sloughing in Right Iliac Region terminating in fatal Hemorrhage.* By J. F. Nivison, Licentiate of the Royal College of Surgeons, Edinburgh, and Assistant Surgeon to the Forces.

FATAL internal organic lesions sometimes occur in the human system without eliciting, during the life of the patient, diagnostic marks sufficiently clear or defined to guide the conduct of the surgeon; and when the seat of such disease is in the neighbourhood of important organs, the path of the practitioner's duty is still more embarrassed. The following case may be viewed in this light.

Although daily reports are trite and insipid, it appears necessary, however, to make the Regimental Medical Register the guide for the following sketch of the disease, concluding with the dissection report, and a few remarks.

Private William Munday, 53d Regiment, ætatis 23.—On referring to the Medical Register, this man had been under treatment in hospital for synocha in February 1825; synocha, July following; common continued fever, October 1825; herpes, February 1827; April following, tinea capitis; herpes, February 1829; June following, gonorrhœa. From these frequent attacks of disease, his constitution was impaired, although he could not be considered a very weakly individual. March 23, 1830, was admitted this day into the Regimental Hospital. The more prominent affection at first was herpes, principally confined to the lower extremities; together with this disease of the skin, there existed, on admission, an open sore in each groin, over Poupart's ligament, the result of venereal buboes, which had apparently just burst. There was nothing observed peculiar in the state of these sores,—in fact nothing to rouse suspicions of his impending fate. The herpetic eruption soon yielded. The patient stated he contracted the venereal infection in the town of Gibraltar. April 5th.—Soon after his admission, a sinuous concavity was discovered by the probe in the open bubo in the right groin, which, not appearing to fill up by the granulating process, was freely laid open this day with the sharp-pointed bistoury and director. An occasional report will now be given to show the progress of the disease, which soon began to wear a serious and unexpected aspect. On admission, *Pulv. Cathart. Baln. tepid. Linteum bubon. admovr.;* low diet, extra tea.—On the 5th to bubo, *Cataplas. emoll. ex Far. Sem. Lin.*

April 12th.—Has complained of considerable pain in the right groin where the opening was enlarged, and to-day suffers from headach, heat of skin, thirst, and other marks of constitutional disturbance; pulse 90. Took four grains of calomel, and four antimonial powders, and afterwards an ounce of castor oil. Vomited the oil. An injection was then given. Passed only two stools. To have a Seidlitz powder four hours after the following pills.

℞ *Ex. Colocynth. comp. gr. xv. Hyd. Submur. gr. vj. confect. Ros. gr. i. ut ft. mass. in Pil. iv. divid.*

13th.—Much better to-day; pulse 80; bowels freely evacuated. *Capt. Pil. i. ut sup. prescript. et post Pulv. Seidlitz. Habt. etiam Liquor. Ammon. Acetat. dilut.* ℥*i. 3tia quaque hora.* Spoon-diet; extra tea.

30th.—Slight oozing of blood has occurred from the open bubo right groin since last report; the sore is of an indolent disposition; granulations are spongy and otherwise unhealthy; general health seems slightly affected. Cavity of bubo rubbed with the lunar caustic; lint and roller applied. *Med. lax. pro re nata.* Rice pudding; extra tea.

May 6th.—There has been considerable oozing of blood from the sore since last report, notwithstanding the use of the *Emp. Sulph. et Argent. Nit.* and the employment of compress and roller. *Applicetur parti affectæ Sal. Ferri Sulphatis.*

10th.—The hemorrhage has taken place frequently since last report, but not in such quantity, a firm compress and roller, with astringents, being used. *Continuentur Medicamenta ut antea.* Bread, ½ lb.; wine, 10 oz.

12th.—Last night the bleeding again occurred; the patient lost about six ounces. General tumefaction is now observed in right groin, between symphysis pubis and anterior and superior spinous process of *os ilium.* Pressure immediately above the orifice of the sore stops the bleeding. From the dark colour of the blood, and from its gradual oozing out, it seems probable that the blood issues from a vein or veins. Countenance pale, with evident derangement of system; complains of want of sleep during the night. *Admoveatur Linteum tinct. Catechu dilut. à imbutum.* Sponge likewise applied with a firm compress and roller. *Haust. Anody. h. s. capiend.* Same diet.

13th.—From an attack of vomiting he lost a few ounces of blood this morning; abdomen on inner side of spinous process of os ilium appears more swollen, tense, and painful. A piece of sponge moistened with *Tinct. Catechu* (with an attached string,) introduced into the cavity from which the hemorrhage proceeds. His spirits appear depressed. To have food easy of digestion, as arrow-root, sago, &c. &c. Sponge tent, *Liquor Ammon. Acetat.* applied to tumefied parts; roller removed. *Haust. Effervesc. ter in die sumend.* Omit the wine.

14th.—Has lost a few ounces of blood since yesterday; considerable disturbance of the system, with slight hiccough and shivering; countenance pale and languid; pulse 130, and weak; parts around sore, tumid, glistening, and painful, and the pain extends down the thigh of the affected side. Thc bloods shows no tendency to coagulate, but flows out in a dissolved state. It was deemed improper in the patient's state to attempt any operation, from the existing doubt or ignorance of the exact vessels giving out the blood,—in fact of the nature of the morbid actions going on internally, and as hectic fever seemed now established. Sponge tent, spirituous lotions to tumefied parts; perfect quiet enjoined; lemonade; articles of diet to be regulated according to his taste; to be of a light nature, and given in small quantities at a time.

15th.—Passed a restless night; pulse 120; lost a few ounces of blood.

The discharge is generally stopped by the sponge and compress, excepting when he turns in bed or uses any similar exertion. The tension around the affected parts appears less this morning; his system is in a cachectic state; harassed with flatus in stomach and bowels; motions of the right thigh attended with pain, and the limb is slightly swelled from the knee upwards. The patient lies on his back, which has been the case since the commencement of the hemorrhage, and the hip and knee-joints are bent to an obtuse angle. *Haust. Spirit. Ether. Nitrici cum Spirit. Menth. pip. p. r. n. adhibend. Contr. alia remed. local.* A soldier is appointed now to watch constantly at the bed side.

16th.—Freedom from any return of the bleeding until this morning, when he lost about four ounces, although the pressure was kept up. The tension and tumefaction increased considerably after and during the hemorrhage. Shivering complained of, although the skin feels hot to the touch. The least motion has a tendency to renew the hemorrhage; pulse small and rapid; thirst continues; tongue dry and brown; bowels confined, although often inclined to laxity. The patient discovers much timidity and apprehension as to his state. This may be partly accounted for from his having been much among sick persons, having been employed in hospital as sick "orderly." Feels pain over the sacrum from pressure.

℞. *Mag. Carbon. gr. xxx. Rhei pulveris gr. x. Zing. rad. cont. gr. iv. Spirit. Menth. pip. M. xx. Aq. Font. ℥iij. M. ft. haust. st. sumendus.*

Sponge moistened with *Tinct. Catechu dilut.* introduced into the cavity with compress and adhesive plaster. Fomentations to be constantly applied over seat of tension and tumefaction. Folded sheets introduced on each side of the *os sacrum.*

17th.—Has had no return of bleeding, and in other respects as yesterday. Dressings not moved. Bowels relieved. *Vespere.* Slight oozing from the sore, of a fetid sanguine purulent nature.

The dressings removed and parts cleaned. Continue fomentations to seat of pain and tumefaction, and let the sponge be occasionally moistened with *Tinctura Catechu.* Milk.

19th.—Has had a considerable discharge of bloody sanies from the sore; tumefaction much the same, but softer to the touch; had last night a poultice over it. The swelling of affected thigh nearly subsided, but he looks hectic; pulse 126; tongue moist but furred in the centre. Wishes to change his milk for fowl. Half a fowl.

To discontinue the sponge; apply dossils of lint moistened in a saturated solution of alum in water, with moderate compress. Continue fomentations to tumefied parts. *St. mass. Pil. Hydrarg. grana quinque cum Haust. Anody. hora somni.*

20th.—Hemorrhage recurred yesterday, and a considerable portion of a substance of a membranous appearance came away, and the bleeding ceased on slight pressure, but again returned this morning about half-past one o'clock. He must have lost by both bleedings nearly one pound of blood. The dressings not removed. He complains much of the tumefaction around and above the sore, and a difficulty in voiding urine. The catheter introduced, and not more than a table spoonful existed in the bladder. Coverings to remain *in situ*, and the utmost quiet enjoined.

21st.—There has been no hemorrhage since yesterday morning, but considerable tension and tumefaction, with great pain continue; pulse 140, wiry, and vibrating to the touch. Countenance expressive of great anxiety and debility; bowels confined. To have two ounces of port wine in negus every third hour. *Contr. alia ut antea.*

22d.—No bleeding for two days. On dressing the sore this morning the cotton appeared plugged by a substance resembling cellular membrane, with a slight oozing of blood. Seems very weak; tongue dry and dark in the centre; bowels rather torpid. *Capt. statim Mass. Pil. Hyd. gr. v. h. s Contr. Vin. rub. ut heri.* The dressings to be damped occasionally with the *Mist. Camphoræ.* Oranges.

23d.—There does not appear any change in the sore or tumour, but he seems weak and sinking fast. *Continuentur Vin. et alia med. ut heri præscript.*

24th.—The sore has a gangrenous look, accompanied with a most fetid discharge. In other respects the patient continues the same. No hemorrhage. *Continuentur omnia.*

25th.—A blistered vesicle, containing a little grumous blood having formed on the lower and lateral aspect of the general tumefaction in the groin (about two inches below the superior and anterior spinous process of the *os ilium*) it was opened this morning, and discharged about two pints of coagulated blood and well-digested pus. He feels easier, and slept well during the night; pulse 130; tongue moist and clean at the edge. To have the whole iliac region covered with a poultice. *Contr. Vin. cum Haust. Salin. Effervesc.*

℞ *Quinæ Sulphatis, gr. x. Mass. Pil. Hyd.* ℈i. *Conserv. Ros. q. s. ut ft. Mass. in Pil. viij. divid. Sumat unam ter in die.*

27th.—Great discharge of pus and grumous blood from lateral opening, and likewise from the original one. Emaciation considerable; pulse 120; has had three tolerably natural stools; tongue dry, and brown in the centre, but states he has less thirst; general tumefaction of groin much diminished, and scarcely any observable swelling exists now of the thigh of the affected side. In better spirits, and expresses inclination for food, which, however, is capricious. This, however, to be attended to in the selection of his food. A sore, with rather inflamed edges, has appeared over the *os sacrum.*—*Contr. Pil. ut sup. præscript. Cataplasma ex far. sem. Lin. part. affect. admoveatur. Injiciatur Enema Domesticum vespere.* Fowl. Oranges.

28th.—The original opening about half way between the *symphysis pubis* and the anterior and superior spinous process of *os ilium* is filled with a firm coagulum, which is covered with a layer of coagulable lymph, and granulations are beginning to shoot up. Above a pint of pus and coagulated blood, together with fetid gas flowed from the recent opening near the spine of the ilium, assisted by pressure of the hand. He is quite coherent and improved in spirits since the hemorrhage ceased, but the expression of his countenance is indicative of great depression of the *vis vitæ.* Bowels opened by enema. Wine and any light article of diet *ad libitum.*

Vespere.—At about half past eight o'clock, the patient informed his comrade that he felt himself wet and uncomfortable underneath. The bedclothes were turned down, when the fluid was found to be pure blood. The patient on hearing this became restive, which naturally increased the flow of blood, and he expired in a few minutes, and just as a medical officer approached the bed side. The bed was soaked with about four pounds of blood. It may be necessary to state here, that the blood lost during the three last attacks of hemorrhage showed more of the arterial hue; before this it certainly appeared venous blood, and oozed very gradually, as above stated, from the surface of the sore.

Sectio cadaveris.—An extensive, ulcerated, and sphacelated cavity, containing a collection of fetid sanies, pus, and coagulated blood, was exposed by the knife, extending upwards to the sides of the lower lumbar vertebræ, laterally occupying the hollow of the *os ilium* and sacro-iliac junction, and descending for a short way between the bladder and rectum. The same morbid fluids, with the exception of blood, were then traced downwards below Poupart's ligament, dipping deeply between the layers of muscles on the inner and upper aspect of the thigh, and ultimately penetrating the capsular ligament of the hip-joint. This capsule was thickened, and showed marks of recent inflammatory action; and the acetabulum, head, and neck of the femur, were found partially denuded of their cartilage and periosteum. The transverse and internal oblique muscles bounding the seat of disease were destroyed by sphacelus, nothing remaining anteriorly but the integuments, and a degenerated slip of the *obliquus externus*, which last was lined by an adventitious or pseudo-membrane. Only about an inch and a third of the external iliac artery, at its origin from the common iliac, escaped the ravages of the sloughing process, the remaining end or orifice was found flaccid, slightly contracted, and empty of blood. For the space of half an inch, the upper portion was firmly plugged up interiorly, by organized coagulable lymph. This total annihilation of the vessel descended below the crural arch, and terminated a quarter of an inch above the giving off of the *arteria profunda*; hence the epigastric, circumflex, and nearly the whole of the common femoral artery shared in the destruction. The upper orifice of the common femoral artery remaining was discovered widely open, and appeared exactly as if it had been nibbled across, more especially at its posterior aspect. Membranous layers of organized coagulable lymph surrounded this open mouth of the artery, which could be peeled off quite distinct from the proper coats of the vessel; evincing that nature had likewise here made an effort to stop the fatal effusion of blood. On throwing water into the aorta above its division into the common iliacs, the fluid was seen to gush upwards from the open remains of the common femoral. The peritoneum bounding the site of disease was not penetrated, although a small portion of this membrane presented a livid hue, and probably would soon have given way had life been prolonged. The external iliac vein was slightly indurated in its texture, but its canal was pervious and entire. The iliac fascia, cellular sheath, and surface of the *psoæ*, *iliacus internus*, together with the deep-seated muscles of the thigh, subjected to the pressure and action of the morbid mass of fluids, were softened and otherwise altered in their structure, and exhibited externally a dirty green colour.

Had not the blood-vessels easily given way in this case, in all probability, before the patient's death, a greater share of muscular, and ultimately the adjoining osseous tissue, would have been involved in disease.

Observations.—Hopes were beginning to be entertained in the above case, that recovery might be the final result, if the system could have been supported under the daily excessive discharge, more particularly as the hemorrhage had completely ceased for six days, granulations had commenced within the original opening, and the appetite and spirits were improved. The destruction of such large arteries as the above dissection discloses was not of course then anticipated. This is a case regarding which it is quite possible different and very opposite opinions may be formed. It appears pretty clear, however, that the disease within and around the hip-joint was consecutive. The circumstance of the patient almost constantly lying on his back after the commencement of the hemorrhage from the bubo, would cause the morbid fluids to gravitate towards the inner aspect of the thigh; and from the tension, elasticity, and tumid state of the parts above, the pus and sanies would naturally be forced between the layers of muscles towards the joint. Supposing the disease in the hip to have been the primary affection, it would be extremely difficult to explain how the morbid actions could, in so short a period, extend to the right iliac region, causing such devastation of large blood-vessels. It is farther not less evident, that the erosion and total destruction of the coats of the external iliac, common femoral, and other vessels, were consecutive or secondary, and not dependent upon any primary disease, or aneurismatic state of those arteries.

The total absence of pulsation throughout the whole progress of the disease, and likewise the total absence of tumefaction until the 12th May, about a month after the first appearance of oozing of blood from the sore in the groin, and sixteen days before the patient's death, may be stated to prove this.—It may be said aneurisms sometimes do not pulsate; but is it at all likely that an aneurism could have existed along the course of so large an artery without pulsation, more especially at the point where the common femoral lies so near the surface under the crural arch? Besides, the history, the rapid progress of the case, and no vestige appearing on dissection of the sac of an aneurism, all strongly militate against such a supposition. The records of surgery adduce many melancholy examples of the effects of extravasated fluids in causing local and constitutional derangements terminating in death. In the case under consideration, the original apparent trivial bleedings from the open bubo, or sore in the right groin, seemed to proceed from debility or relaxation of the superficial blood-vessels of the part affected. This local degeneration might have proceeded from the state of the patient's constitution which, as above noted, had previously been in a declining state, or from causes not easily defined, or cognizable to the senses. By the 12th May, general tumefaction of the affected groin had taken place, which appeared to favour the supposition that the blood continuing to ooze from the sore had begun to insinuate itself underneath the layers of the muscles and fasciæ of the abdomen. —From this date the patient got rapidly worse, and by the 14th hectic fever was established. It is highly probable, therefore, that the blood, on finding a passage, would continue to burrow among the muscles towards the interior: hence the presence of fluid and putrid coagulated blood, pent up between the layers of the abdominal muscles, and between these and the peritoneum, acting chemically and mechanically, displacing, stretching, and distending the muscular fibres, fasciæ and tendinous sheaths, would necessarily give rise to intense local inflammation, and constitutional irritation, succeeded by rapid ulceration and sloughing. The first artery implicated, on the supervention of the ulcerative and sloughing processes, was in all likelihood the epigastric, which of course would pour out blood in sufficient quantity to account for the sudden and fatal alterations of structure that ensued. When extravasated blood was first suspected to be the cause of the latent mischief, how far an early incision would have benefited the patient is doubtful. The parts subjected to the knife might have ulcerated or sloughed. The state of the patient's system warranted this idea; because why did the trivial operation of enlarging the bubo with a bistoury cause the parts to take on an unhealthy state of action? The tense state of the abdominal parietes and pressure of the impacted coagula, much of which had assumed regular concentric laminæ, (as usually happens with blood extravasated interiorly,) doubtless retarded the fatal bleeding for many days.

The above views of the pathology of the disease coincide with the opinion of Dr Maclean, the intelligent and experienced surgeon of the 53d regiment.

Had tying the external iliac artery been attempted as a last resort, it would have been found closed by a process of nature, and the gush of blood upwards from the remains of the common femoral would have urged the operator to throw a ligature around this vessel; and if this had been done, the numerous arterial anastomoses, the fatal source of the effusion of blood from the femoral artery, would almost to a certainty have kept up the hemorrhagy from the remnants of the smaller blood-vessels involved in the general sloughing. Before the case began to wear a grave complexion, what success would have attended the ligature of the external iliac artery, I leave to the surgical profession to determine. From the wonderful system of inosculations in the human body, I am of opinion the only feasible operation, after the arteries had given way, was the ligature of the common iliac artery; but as regards the case under review, its execution would have displayed more surgical boldness than zeal for the recovery of the patient. Until the science and art of surgery arrive at mathematical certainty, adverse cases like the above will occasionally occur. The economy of the human system must, however, undergo a radical change before any branch of the healing art can be followed up with unerring precision. The surgeon sometimes resembles the mariner; without a compass, they are both equally at a loss what course to pursue.

Notwithstanding the modern light derived from morbid anatomy in forming a correct diagnosis during the life of the patient, still it too frequently happens that the painful knowledge of the extent and nature of the morbid mischief is first taught on examining the body after death.

Garrison of Gibraltar,
September 9th 1830.

ART. IX.—*On the Treatment of Malignant Ulcers of the Nose and Face.* By FRANCIS ADAMS, Esq. Surgeon, Banchory.

IT must be admitted that the malignant ulcers on the face, to which the absurd name of *Noli me tangere* has been applied, are neither well-defined, nor the principles of treatment satisfactorily laid down in modern works on surgery. They are generally stated to bear a considerable resemblance to the genuine carcinoma. Without doubt they possess a near alliance to the carcinomatous character, as has been pointed out by Celsus with a degree of acuteness and precision which it will not be found easy to equal, much less to surpass. He begins with the remark, that the parts most commonly attacked with the carcinoma are the face, the nose, the ears, the lips, and the female breasts; and that the liver and spleen are likewise sometimes affected. He then describes at considerable length the variety of appearances which it puts on. He adds, it begins at first as the cacoethes, then passes into the carcinoma without ulceration, and ends in the fungous ulcer.* The result of every attempt to cure the genuine carcinoma is stated by him in the following terms, which, it is to be lamented, are but too applicable to modern experience in these unfortunate cases:—"Tolli nihil, nisi cacoethes, potest: reliqua curationibus irritantur; et quo major vis adhibita est, eo magis. Quidam usi sunt medicamentis adurentibus; quidam ferro adusserunt; quidam scalpello exciderunt: neque ulla unquam medicina profecit: sed adusta, protinus concitata sunt, et increverunt, donec occiderent; excisa, etiam post inductam cicatricem, tamen reverterunt, et causam mortis attulerunt." He afterwards goes on to point out the way by which the nature of the disease is to be discovered. "Discernere autem cacoethes, quod curationem recipit, a carcinomate, quod non recipit, nemo scire potest, nisi tempore et experimento. Ergo ubi primum id vitium notatum est, imponi debent medicamenta adurentia. Si levatur malum, minuunturque ejus indicia, procedere curatio potest et ad scalpellum, et ad ustionem: si protinus irritatum est, scire licet, jam carcinoma esse; removendaque sunt omnia acria, omnia vehementia."—Lib. v. c. 28. What the "medicamenta adurentia" are he himself has declared in another place: "Adurunt auripigmentum, atramentum sutorium, chalcitis, ærugo, calx, fæx combusta, sandaracha," &c.—Lib. v. c. 8. It may be proper to explain briefly the nature of these substances. The *auripigmentum* was orpiment, or the yellow sulphuret of arsenic. The *sandaracha* was realgar, or the red sulphuret of the same.* The *atramentum sutorium* was a solution of the sulphate of copper. The *chalcitis* and *misy* were two substances nearly allied to one another, and there is reason to believe that both resembled blue vitriol,—at least it is certain that both were formed from copper, and possessed caustic properties. The ancient *ærugo* was much the same as the modern verdigris. The *fæx usta* was certainly a preparation of potass These are the medicines from which Celsus directs to make the first applications to the cacoethes or malignant ulcer. Arsenic, it will be remarked, stands foremost in the list. When these fail he recommends to have recourse to the knife or the actual cautery. In fact, the medicines we have been treating of were considered by the ancient physicians to resemble very much in operation the effect of the cautery. Galen, treating of the cacoethes,

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* It is to be regretted that the text here is manifestly corrupt.—See the editions

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of Targa and Milligan. I have followed the conjectural emendation suggested by the latter.

[*] The action of the sulphurets, as Hoffman and Mead have stated, is less corrosive than that of the oxide. Perhaps it is for this reason that Sir Astley Cooper, in cases of *Noli me tangere*, uses an ointment containing equal proportions of sulphur and arsenic, (*Lancet*, Vol. i.) At the same time, as this combination must weaken the escharotic powers of the arsenic, I cannot see any great propriety in this practice.

says, " Chalcitis, misy, arsenic, and sandarach, burn like fire; and often when these are not successful we have recourse to fire itself."—*Therap. ad Glauc.* Lib. ii. From their property of occasioning the formation of sloughs they were generally called septics.

But although we have mentioned Celsus first among the ancient authorities on this subject, because his statement of the distinction between the cacoethes and the carcinoma is particularly striking, it must not be forgotten that Hippocrates has the merit of having pointed out the principles upon which all indolent ulcers of this class are to be cured. " Diseases of long standing," he says, " are more difficult to cure than recent ones; but such as are of long standing ought in the first place to be brought into the state of recent ones. When, therefore, an ulcer becomes callous its indurated edges are first to be removed by septic applications, and then dressings of an astringent nature are to be used."—*De locis in homine.* The simple principle of treatment here laid down is of the most extensive application, insomuch, that, with the exception of the genuine carcinoma, and those cases in which the constitution is particularly unsound, there is scarcely any ulcer which may not as an *ultimum remedium* be healed in this way; * and even the sores generally accounted cancerous may often be removed by this method more effectually than by the knife. Hippocrates was likewise not inattentive to the constitutional treatment. He states, that malignant ulcers, especially those on the head, are benefited by the use of emetics and purgatives. It must be clear to every one who is familiar with the physiology of the Father of Medicine, that his intention in recommending this treatment was partly in order to produce revulsion from the head, and partly to rectify the state of the *primæ viæ*, by which the system is supplied with nutritive juices. In the ancient practice of physic much greater attention was paid to the condition and distribution of the animal fluids than is done at the present day. But for a full account of this part of the treatment we must refer to Aëtius, who has enlarged upon it with such ingenuity and acuteness, that, I will be bold to affirm, although the modern masters of the art may have multiplied the number of remedial means, they have not improved upon the principles laid down by him for rectifying the disorder of the constitution. He recommends to consider attentively the habit and temperament of the patient, and to apply the suitable remedies accordingly. Thus, he says, when there is a fulness of blood venesection ought to be had recourse to; when the constitution is loaded with impure chyle he is either to be bled or purged; and if the liver or spleen appear to have given rise to the disease their state is to be attended to and corrected. It appears to me that there is nothing in the ingenious observations of Mr Abernethy on the constitutional treatment of ulcers which in principle is more sound and important than these rules of Aëtius. It will be remarked, that the state of the liver is particularly adverted to as deserving of attention in conducting the cure of malignant ulcers. There can be no doubt that attention to the condition of the liver in these cases was suggested by the physiological doctrine that this viscus is concerned in the function of sanguification, and that the bile is the excrementitious part of the blood. This opinion, although, I believe, not generally entertained by physiologists in this country, was lately advocated in Germany by the learned Professors Tiedemann and Gmelin. Of all the hypotheses which have been advanced in ancient and modern times respecting the use of the spleen there is none more plausible than that which is maintained by Aristotle, namely, that it forms a part of the hepatic system.—See *De partibus Animalium*, Lib. iii. c. 7.

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* It is against the abuse of this practice by the medical sect called the Methodical that Galen expends all the shafts of his ridicule.—*Meth. Med.* Lib. iv.

The Arabian authors, in treating of the malignant ulcer, display a thorough acquaintance with the principles of their Grecian masters, but do not suggest any improvement of practice. I need only mention with regard to them that Avicenna and Rhases are particularly full upon this subject, and that their treatment consists in first correcting the constitutional derangement, and then effecting the removal of the diseased parts by septic medicines, such as flowers of copper, copperas, arsenic, quicklime, and the like.—See Avicenna, Lib. iv. Fen. 4, Tr. 3, and Rhases, *Continens*, Lib. xxviii.

Having thus given an outline of the ancient method of treating these diseases, I will now briefly state the result of my own personal experience, which I will illustrate with the history of a case that came under my observation lately. If there be any other rule by which the cacoethes may be distinguished from the carcinoma besides the " tempus et experimentum," as stated by Celsus, it is by attending to the symptoms of constitutional derangement, by which the latter is generally accompanied. It seldom or never happens that the genuine carcinoma is met with but in broken down and cachectic constitutions, as indicated by sallowness of the skin, extreme torpor, and a cadaverous expression of countenance; and hence I am inclined to believe, that the local affection never takes place until the general system has become deranged. In the cacoethes, on the other hand, the constitutional derangement generally does not assume any fixed invariable character, but rather resembles what has not improperly been called a cacochymy than that state which we have mentioned as being characteristic of the carcinomatous diathesis. It seldom happens, likewise, that the cacoethes is attended with the acute darting pain of the other; and although, when allowed to continue its course uninterrupted, it uniformly goes on increasing the extent of its ravages upon the adjoining parts, it is very rare, that, like the other, it occasions swelling and induration of the lymphatic glands at a distance from the seat of the disease. The most intractable cases of cacoethes which I have met with have begun at the inner angle of the eyelids, when I have generally found it impossible to make the proper applications effectually, on account of its vicinity to the ball of the eye.

I have varied the constitutional treatment, according to circumstances. When I remarked any tendency to congestion of blood in the head, I have always had recourse to local depletion; but have never abstracted blood from the general system. In almost every case I have put a seton into the nape of the neck when the ulcer was nearly healed. When I have had it in my power to regulate the diet exactly to my wish, (but this is seldom the case, for I have seldom met with the disease except among the lower ranks of society,) I have generally directed that the food should be somewhat restricted in quantity, but wholesome and nutritive. By a proper attention to regimen, I have found that the derangement of the digestive function can in general be more effectually remedied than by medicines; and yet, in a few cases, I have administered small doses of mercurial alteratives with this intention. At one time, I was in the practice of giving the arseniate of potass internally; but in no one instance did I ever remark that any decided amendment resulted from the use of it. The administration of it in this disease seems to be purely empirical; for I have never seen pointed out what is the peculiar disorder of the general health which it is calculated to remedy; and I repeat that the constitutional derangement in the cacoethes is not marked by any one fixed character. As to the external applications, I have no hesitation in saying, after the most ample experience, that my principal dependence is placed in the septic medicines recommended by Hippocrates and Celsus. Of these arsenic is unquestionably the most efficacious. I have used it generally, either in the form of a powder, combined with some of the other articles of the same class, such as the sulphate of copper and quicklime; or mixed up with some simple salve. As it has little or no action upon the unabraded cuticle, I have found it necessary, when applying it to parts which were covered with cuticle, to add to it a certain proportion of the powder or ointment of cantharides. To solutions of arsenic I in general am wholly averse, partly because they are too weak to act sufficiently upon the hard indolent edges and granulations of the ulcer, and also because in that state the danger of absorption must be greatly increased. I speak thus, however, solely from acknowledged toxicological principles, and not from personal observation; for, after having used these medicines pretty extensively for a good many years in the treatment of malignant and indolent ulcers, I can positively declare, that never in any one instance have I observed any unpleasant effects from the absorption of them. Indeed, in the diseased state of the parts to which I have applied them, it is not at all probable that the absorbent powers can be very active. In a few cases I have applied the actual cautery; but, except that the extent of its operation can be better regulated than that of the septic medicines, it does not seem to possess any decided superiority over them.

The subject of the case which I am now about to relate, Alexander Wattie, is a poor man of sober and industrious habits, 83 years old: about thirty years ago he three times underwent the operation of excision for a disease of the under lip, which was reported to be cancerous; and since that time he has enjoyed good health, except that of late he has sometimes experienced symptoms of congestion in the head. In the month of March last year, according to his own account, a small hard tubercle appeared on the left side of his nose, near its middle. At first it gave him little uneasiness, and excited no apprehension; but gradually the neighbouring parts became ulcerated, and the disease went on spreading, so that in the month of August, when I was called to see him, it had assumed a very formidable appearance. The ulcer had extended from the extremity of the *ala nasi* to within less than two lines of the eye; it was covered in the middle with foul ash-coloured granulations; its edges were callous, hard, and in some places swelled to the height of more than half an inch. For some time it had shown a considerable disposition to bleed. In addition to the discouraging symptoms which I have mentioned, a hard tumour or polypus was discovered to be forming from the inner membrane of the nostril. I may mention farther, that, whether from his having applied lunar caustic too freely to it, or from the phagedenic nature of the disease, a small opening had been formed in the flesh of the nose through which his breath passed. This combination of unfavourable symptoms would have made me abandon the case as an intractable carcinoma, had I not observed that he had not the sallowness of complexion and decidedly cachetic habit of body which I have remarked to be the inseparable concomitants of the latter. In the first place, then, I sprinkled the ulcer with the following powder, which was intended both as a styptic, and as an escharotic to clear away the unhealthy granulations.

℞ *Oxydi Arsenici* ʒj. *Calcis Vivæ* ʒss. *Sulphatis Cupri* ʒss. *M.*

It is scarcely necessary to mention, that of this powder only very small quantities were used at a time. The effects of it, in a great measure, corresponded with my expectations, for the bleeding was immediately checked by the formation of sloughs; and when they came away, not a drop of blood was lost. I soon found, however, that the hard callous edges of the sore, especially about the ala nasi, did not at all yield to this application; and therefore I dressed them with the following ointment:

℞ *Ungt. Cetacei* ℥ss. *Oxydi Arsenici* ʒj. *Emplast. Canthar.* ʒiij. *M.*

After using this application for a few days, I had the satisfaction to find, that the upper part of the hard fungus was blackened; and in a few days more it came away. By a repetition of this dressing, and renewing it always as a slough dropped off, the whole of the diseased parts on the outside of the nose were at last removed; and thus, agreeably to the precept of Hippocrates, was the old sore converted into the state of a recent one. But as the polypus within the nose still remained, I thought of attempting the removal of it by the same means. Having, therefore, carefully plugged up the passage to the internal fauces with a dossil of surgeon's lint, bound round with a silk thread, I applied to the tumour a small piece of linen, spread with the above-mentioned ointment, and then bringing up the ends of the thread, I secured them below the strips of adhesive plaster, which were used for retaining the dressings on the external sore. In this way the dressing applied to the tumour was prevented from falling off; and the discharge from it was not allowed to fall back into the throat. Within a few days after the application of this dressing, the tumour became dead, and dropped off. Respecting the constitutional treatment, I need only mention, that, as the patient, although advanced in years, showed vigorous remains of a sanguine temperament, and appeared to have a considerable tendency to plethora about the head, I several times got leeches applied to his temples, and gave him some doses of active purgatives. It is unnecessary to detail the minutiæ of the local treatment after the sore had been brought to a healthy condition, as the only indication which then remained to be attended to, was to interfere as little as possible with the restorative principle of nature. Suffice it to say, that within little more than two months from the commencement of the treatment, the sore was completely healed up, with the exception of the small opening into the nostril. With a small portion of the skill of a Tagliacotti or a Liston, it would no doubt be easy for me, by paring away the edges of the opening, and afterwards uniting them with the sutures, to effect a complete restoration of the nose to its former appearance; but, considering the advanced age and station of my patient, I think it quite unnecessary to make him submit to a surgical operation, however trifling, in order to remove a deformity to which he attaches but little importance, and which a little bit of plaster can completely cover.

ART. X.—*On the Utility of the Secale cornutum as a Uterine Excitant.* By WILLIAM HENDERSON, Esq. Surgeon, Corstorphine.

IN the course of my professional attendance upon cases of midwifery in the country, I have often had much occasion to regret the great loss of time a practitioner experiences in protracted labours, and much reason to wish that some safe and effectual means could be devised to accelerate the progress of uterine action. From the observations Dr Renton published in this Journal upon the use of *Secale cornutum*, I was led to try the effects of that medicine; and having had many opportunities of putting its efficacy to the test, I beg leave to transmit the result of my experience upon the subject.

The first case in which I had occasion to use it occurred in a young woman during her first confinement. When I was first called, the uterus was dilated about the size of a half-crown, the pains were weak, irregular, and slow. The uterus was flaccid,—the external parts soft, and not in the least degree rigid, —the general habit of the woman very relaxed, so that a speedy labour might have been expected if the muscular contractions of the uterus had been regular or powerful. The labour continuing in this lingering way for twelve hours, I gave her two doses of the *Secale cornutum* in infusion, with half an hour's interval. The pains immediately quickened after the first, but powerfully after the second dose, and continued to go regularly on, when she was safely delivered within the hour.

In another case which occurred about this time, in a woman who had a large family, and whose labours were easy but slow, one dose of the medicine in infusion had the effect of bringing on uterine action, and terminating the labour within one hour. This woman had for twenty-four hours slight irregular aching pains in her back, with no effect on the *os uteri*, which was but slightly dilated when she got the medicine.

The third trial I made of it was in a woman in her third labour,—the pains were weak and irregular, and continued so for twelve hours,—the *os uteri* dilated about a crown, soft and thin. The interval between the pains was from ten to fifteen minutes. Two drachms in powder had the effect in about ten minutes of strengthening and quickening the uterine contractions to every three minutes; and the woman was safely delivered, in about an hour and a-half from the taking of the medicine, of a first child, and in an hour afterwards of a second.

Encouraged by the result of these cases, I have embraced every opportunity of trying the effects of the *Secale cornutum* in lingering labours; and having had extensive and frequent occasion for its employment, the following observations may not be uninteresting to some of the readers of your Journal.

In the first place, the *Secale cornutum* appears to be a powerful uterine irritant. It has never, in my experience, failed to excite uterine action; and I have tried it in at least from thirty to forty cases. If it was necessary, I could add many more to the three already described, to prove its efficacy in that respect. In a case of abortion, a dose of it had the effect of bringing on uterine action, and expelling the secundines three days after the fœtus. The medicine was taken when there had been no pain for twelve hours, and was administered for the purpose of stopping the hemorrhagy, which was occasioned by the retention of the placenta. Half an hour after it was taken, it excited the uterus, and in the course of two hours emptied its contents.

In the second place, though it seems to be a universal uterine irritant, its utility in accelerating labour is not so generally to be depended upon. On the contrary, it wearies out and fatigues the patient, unless it be administered under particular circumstances, from an ignorance of which its application will be found injurous. So far as my experience goes, it will be found hurtful if used before the *os uteri* be dilated, though this is not always the case, more especially where the uterus is flaccid and dilatable; but I would never recommend it to be used even in such cases (for in these it is most useful,) until the *os uteri* is dilated to the size of at least a crown. The following case will show the inutility of its early adoption in labour. Before narrating it, I may remark that in inflammatory constitutions, in persons of full plethoric habits, and where the uterus is rigid and only gradually dilatable, I have not found that the *Secale cornutum* is so useful as might be anticipated.

Mrs C. 4th pregnancy, 2 P. M., had been complaining since nine last night; *os uteri* dilated scarcely to the size of a shilling; pains irregular, varying from a quarter to half an hour between. I administered two drachms of the medicine in powder, which in ten minutes quickened and strengthened the pains, but still with no advantage to labour or effect on the *os uteri*. In two hours I repeated the dose with no better success,—nay, with even injurious consequences on the woman's strength, as the pains were all confined to her back and *fundus uteri*, and in the former place were very severe. In this case I tried no dilatation, but left the medicine to itself, when, no good effects resulting from its use, I checked its powers by an opiate, four hours after the administration of the last dose. By that time, however, its strength was on the wane. This case too was attended by irritability of stomach, but not more than is often met with common cases, where no irritants have been exhibited. Natural labour commenced about ten, she was better in little more than an hour, and had an easy delivery. I have had several cases almost precisely similar, the relation of which would take up too much of your valuable Journal, without throwing any more light on the subject.

In the third place, the effects of the medicine do not terminate always with the labour, but affect the uterus afterwards, more especially, if it has been administered in large doses, as the following case will show.—

Mrs G. 3d pregnancy, 5 A. M., had been ill all night; *os uteri* dilated about the size of a shilling, thick and soft; pains regular but weak, with intervals of about ten minutes. Two drachms of the medicine in infusion were exhibited at six; in a short time the pains became quick and severe, but with little effect on the *os uteri*, which during each pain I gently dilated with my finger. Disappointed at the small progress of the labour with such strong regular pains, at eight, I administered a second dose. The pains came on every three minutes with increased violence, which I assisted with gentle dilatation. The woman was safely delivered at ten. My anxiety, however, only commenced after the expulsion of the placenta, which soon happened; for the pains continued with increased force and regularity till after twelve, and only yielded to large repeated doses of laudanum. The uterus was contracted within the pelvis, firm and hard, each contraction shot convulsively down the legs, depriving them of power with excruciating pain, alarming syncope, and vomiting. She felt very weak with irritable stomach for two days. Ultimately she had an excellent recovery.

Enough has been said to show that the *Secale cornutum* is a valuable medicine to the accoucheur in accelerating labour under particular circumstances, and that likewise, when employed too soon or injudiciously, its effects are baneful to the constitution, and prejudicial to the progress of labour. "We are cautioned, however," says Mr Burns in his work on surgery, "not to use this medicine until the waters have been discharged, and the *os uteri* completely dilated. Under these circumstances, it is expected speedily to increase the pains, and finish delivery; but if given earlier, we are told that the child is destroyed.

According to my experience, the *Secale cornutum* is only useful when the *os uteri* is nearly fully dilated. If given when little dilated, even although perfectly relaxed and dilatable, I have found it rather retard than accelerate labour, and very much fatigue women of a weak and nervous constitution, but never have seen any bad effects result from its use to the child. When administered to women of strong rigid uterine fibre, even though the *os uteri* be pretty well dilated, its effects have generally been prejudicial to the progress of labour. To conclude, in cases of lingering labour, where the *os uteri* is well dilated, and the pains weak, or have a tendency to remit, I have found it a most invaluable medicine in quickening the pains and shortening the progress of labour.

By its use I have often freed myself from many an anxious hour of uneasiness and watchfulness, which formerly I was doomed to bear.

Such a medicine is a valuable acquisition in midwifery. Its merits have been too much overlooked, and too seldom tried. If the success of others be equal to mine, it will soon become an inmate in the pocket of every accoucheur.

Corstorphine,
19*th Nov.* 1830.

ART. XI.—*Medico-legal Examination of two Cases of sudden Death from Wounds.* By ALEXANDER WATSON, Esq. Fellow of the Royal College of Surgeons, Edinburgh, &c.

THE following cases are interesting in a medico-legal point of view. They illustrate what is necessary in the investigation of such cases; and they also show the importance of attention to the minutiæ of medical evidence.

It is necessary to premise, that in Scotland, when any death happens under suspicious circumstances, upon information being given to the Sheriff of the county, the case is immediately investigated. And on medical gentlemen being appointed to inspect the body of the deceased, they are simply told, "there is the body of a person suspected of having died a violent death; report upon the cause of death; and if by violence, state in what manner, and by what means." The task, therefore, is often difficult, and requires the utmost attention even to very minute particulars; for circumstances apparently trifling in the medical evidence often turn out to be of great importance in elucidating and connecting the moral evidence either of the innocence or guilt of the accused.

The first case is that of Ann Rennie or Pollock, who resided at Gifford Park, at the south side of Edinburgh, whose husband was tried in the High Court of Justiciary, 13th February 1826, and was convicted of having murdered her, but contrived to strangle himself in jail previous to the day of his execution.

The body of this unfortunate woman was inspected by Mr Newbigging and myself on the 13th November 1825. We were informed of her having died suddenly. She seemed to be about fifty years of age, of stout form, of very low rank, having lived in a small, dirty, ill-furnished house, having only some shavings and straw upon the floor, covered with a rug, for a bed. The clothes in contact with the private parts were stained with blood. No appearance of injury could be perceived on any part of the body externally. But upon separating the *labia pudendi* a wound about an inch and a-quarter in length was observed upon the inner side of the right nympha. This wound was evidently recent, its surface being covered with coagulated blood. Externally, it consisted of a remarkably clean, straight incision, parallel with the nympha. Internally, the finger could be introduced in four different directions, to the depth of about 2¼ inches in each; upwards and backwards towards the division of the iliac artery; backwards towards the tuberosity of the ischium; laterally towards the hip-joint, and upwards towards the *mons veneris*. In each direction the wound was of nearly the same diameter, which readily admitted the finger, and had distinctly an obtuse termination. By injecting warm water into the large vessels we found that none of them had been wounded, and the penetrating instrument seemed to have been forced only through the cellular tissue. The weapon had passed up to the peritoneum at the right side of the pelvis, under which there was a considerable effusion of blood, but had not penetrated it. Another very small, but also very clean, external incision was observed at the side of that above described.

The cavities of the cranium, thorax, and abdomen were each examined, and their contents found to be quite healthy and natural. The hemorrhage, therefore, which had taken place from the wound was the only cause which we could assign for her death; and this, we knew from the nature and structure (erectile spongy tissue) of the parts cut, must have been profuse.

Respecting the probable instrument with which this wound had been inflicted, it was obvious from the cleanness of the cut that the external part of the incision had been made with a remarkably sharp-edged instrument; and from the very obtuse termination of each of the internal wounds, their small depth, and the absence of any injury of the important neighbouring parts, it was highly probable, that, though the instrument that inflicted the wound must have had a very sharp edge, it had a round or blunt point. Now, the only very sharp-edged instrument which I conceived such persons were likely to have possessed was a *razor*. This instrument has also a blunt point, and could not be inserted to a greater depth than two or three inches, on account of the fingers holding its blade in so using it. I also conceived that, after the external part was cut, any sort of knife could have been thrust into the parts, so as to have formed the wound above described. This I verified by experiment with a razor upon the dead body.

It was proved by evidence, at the trial of the husband for this horrid crime, that two old rusty table-knives had been found in the house, as also two *razors*. One of these razors had its blade and handle covered with blood, and was found concealed in a piece of green cloth. These particulars rendered it almost certain that this had been the weapon used; so that the nature of the wound previously pointed out the probable instrument with much accuracy; though the circumstance of such having been found in the house was then quite unknown to the medical witnesses.

In this case two other points occurred for the consideration of the medical jurist. Could she have inflicted this wound herself? Several circumstances which appeared in evidence rendered this impossible; 1*st*, She was in a state of intoxication at the time; 2*d*, Her husband was in the house along with her,—saw her state,—went for a surgeon, (Mr George White,) and never alleged this at the time; 3*d*, No lethal weapon was found near her; 4*th*, The *pudendum* was a very extraordinary place for a suicide to inflict a wound.

It was also alleged and pled for the prisoner, that she had fallen upon a piece of broken earthen-ware and cut herself. Could this wound, then, have been occasioned by such an accident? It was impossible to conceive that any broken piece of earthen-ware in common use could, by the woman accidentally sitting down upon it, have inflicted such a clean external incision, and produced the wound in the different directions above-described. Such a portion of earthen-ware, if sharp-pointed and advantageously placed, might certainly have produced a pretty severe wound of the part; but it would have been a *lacerated* wound, not of any great depth, and not larger internally than externally, and in no part greater than the size of the wounding body; and it was very improbable that it would have had different directions internally.

The second case, which is very similar to that just detailed, is that of Mrs Bridget Calderhead, who resided at Dunbar Street, near the Canal Basin, and whose sudden death was occasioned by a wound received on the morning of the 1st January 1831. Mr Mitchelhill, surgeon, had been called in to see this unfortunate woman soon after the accident, but found her dead when he arrived. At the request of the Sheriff, I accompanied Mr Mitchelhill in the examination of her body, which we performed on the afternoon of the 1st January, in the Police-Office, to which place her body had been carried.

We found the body of this woman dressed in her ordinary day-clothes, and covered with a blanket. We removed her clothes very carefully. They consisted chiefly of a printed cotton gown, two flannel petticoats, (one blue, the other white,) and a shift. These seemed almost quite new, and had no wound or tear in any of them, with the exception of the blue petticoat, in which there were some small worn-holes. The lower part of all these garments had been drenched with blood, with which they were still wet.

We then discovered that the hemorrhage had proceeded from a wound upon the middle of the left *labium pudendi*. Externally, this wound consisted of a very clean incision about three-quarters of an inch in length, having a straight direction parallel with the margin of the *labium*. When the finger was introduced into this wound, it entered into a bloody cavity sufficient to have contained a small hen's egg; and from this cavity the finger passed to a greater depth in three different directions,—viz. upwards towards the under part of the *symphysis pubis*,—downwards towards the *perineum*, and backwards by the side of the vagina and rectum. Its greatest depth at any of these parts was between two and three inches. When the internal part of the wound was laid open, the divided orifices of several pretty large arteries and veins were seen, and particularly the divided extremities of the large artery going to the clitoris. The orifices of these vessels, as well as the internal surface of the wound, had the appearance of having been very clean cut by a sharp instrument. I removed the wounded parts, and preserved them in spirits.

On the back part of the head there was the mark of a contusion, which had occasioned the extravasation of a small quantity of blood upon the anterior surface of the brain. The cavities of the chest and abdomen were quite natural.

There could be no difficulty in this case in ascribing death to the excessive hemorrhage occasioned by the wound at the *labium pudendi.* We therefore gave this as our opinion as to the cause of death. The other question then arose, What was the probable instrument and manner in which the wound had been inflicted? From the straight, very clean incision externally, in length corresponding exactly to the breadth of many of the knives in most common use, as well as from the extent, cleanness of the wound internally, and its different directions, it appeared pretty evident, and most probable, that it had been inflicted by some kind of knife; and, indeed, it obviously could only have been produced by several thrusts of a knife in different directions. Some pieces of a broken wine-glass, however, had been found adjoining to some of the blood the woman had lost at the foot of the stair where she had received the wound. It therefore became a question of importance, whether or not the wound could have been occasioned by her having fallen upon these broken pieces of glass?

1. Let us consider, Is it *physically possible* that any of the portions of the broken wine-glass, or of any wine-glass in common use, could have made such a wound? A portion of glass capable of forming such a wound must have been between two and three inches long, about three-fourths of an inch broad, having a sharp cutting edge, and some degree of point; and it must also have possessed sufficient strength to permit its having been moved about and thrust in different directions, without breaking. To form such a piece out of a common wine-glass, is evidently beyond the utmost ingenuity of man; far less, then, could such a portion have been formed by accidental fracture.

The broken portion of glass found, consisted of the stalk of a common wine-glass without the foot, having at its upper part the bottom of the cup of the glass, of about an inch in diameter, attached to it transversely. Nearly the whole of the cup of the glass was broken off, leaving only a few fragments of the sides projecting upwards from the bottom which remained. The part of the stalk of the glass which remained was about an inch or an inch and a-half in length, and its lower part had been clean broken across, leaving no sharp point. It was, therefore, quite obvious that this fragment of glass was completely incapable of forming the wound in question; for, the length, form, and sharpness which were requisite, were completely wanting; and any wound which could have been occasioned by it, must have been quite different in its character. A wound from such a piece of broken glass would have been a *lacerated wound*, not a *clean incision*, not larger internally than externally, and could not have had several different directions internally. The upper end of the glass would have made several small lacerated wounds, while the lower end could not have made any wound at all. I therefore came to the conclusion, that it was physically impossible for the wound in question to have been produced by any portion of a broken wine-glass such as that found.

2. But supposing that it had been physically possible for such a wound to have been occasioned by a fragment of broken glass, was it in any degree *probable* for it so to have happened in this particular case? In order to have accomplished this, the requisite portion of glass must have been standing ready to receive the fall of the wounded part upon it; the person must have either sat down, or fallen forward upon it, and her clothes, at the time, must have been completely out of the way, as there were none of them wounded; and moreover, the penetrating piece of glass must have thrust itself in different directions, making clean incisions internally as well as externally. So that a concurrence of circumstances highly improbable, nay, almost miraculous, would have been required, in order that the wound in question could have been occasioned accidentally.

From a careful consideration of the foregoing circumstances, I came to the conclusion, that it was neither physically nor morally possible that the wound received by this unfortunate woman, could have been caused accidentally by her having fallen on the portion of wine-glass alluded to; and such, I believe, were also the opinions of Mr Mitchelhill, and of Dr Christison, who gave his opinion on the case at the trial. But it could not be denied *to be within the verge of possibility*, that the wound might have been occasioned by her having fallen upon some other piece of glass or sharp body, and therefore we each, individually, thought proper in giving our evidence at the trial to qualify our opinion upon this point, by saying that we considered it to be *scarcely possible and very improbable.*

I was also asked at the trial whether or not this wound could have been produced by her having fallen accidentally on a pair of scissors; to which I stated, that I did not think it could by any of the scissors in common use. For, it is obvious that, to have produced such a wound, the blade or blades of the scissors when together, must have had the sharpness of a knife, as also the requisite length and breadth; besides being in an erect position when fallen upon, and afterwards moved in different directions to form the internal wounds,—a combination of circumstances which, as already mentioned respecting the glass, I conceived to be nearly impossible. I may add, that neither scissors nor pockets were found about the person or clothes of the woman.

By the evidence adduced at the trial of two young men, brothers, of the name of Duncan, for the murder of this woman, it was obvious she had received a wound at the first floor of a common stair, almost immediately after which, she was precipitated headlong to the bottom of the stair. When she was there found, upon being set up, blood was observed trickling down her legs. Much stress was laid by the counsel for the pannels, upon there having been no blood seen upon the stair. But when it is recollected that she had on her two thick flannel petticoats, a gown and shift, which were each drenched with blood, it is obvious that the clothes, absorbing the blood when it first flowed, and her rapid progress head forward down the stair, easily explain this circumstance.

The above are two cases very similar in their principal features, and appear to me to be highly interesting in a medico-legal point of view. From the details here given it is obviously necessary, in such cases, for the medical jurist, to form an accurate opinion whether the death had been occasioned by violence or by natural causes; and, if by violence, to say whether most probably by accident, suicide, or murder. These form considerations of the highest importance to medical men, as upon their evidence the lives of others frequently depend.

In the above cases, it is also obvious, how very accurately the nature of the wound may point out the probable weapon of its infliction; and how very important this circumstance is, in establishing the criminal design with which such wounds may have been inflicted.

In both of the above cases, I removed and preserved the wounded parts, by cutting out along with them a considerable portion of the soft parts; at the same time, carefully preserving entire the external wounds. This I consider to be a matter of considerable importance in all such cases; 1*st*, That the wounded parts may afterwards be examined more minutely; 2*dly*, That any lethal weapon or other sharp body afterwards found and supposed to have occasioned the wound may be compared with it; and, 3*dly*, That the nature of the wound may be seen by any other medical jurist who may afterwards be consulted in the case, either by the Crown or in behalf of the accused.

Before concluding, I shall make a few remarks on wounds inflicted in the situation of the cases just detailed. In both the above cases this part of the body seems to have been selected by the murderers to effect their design secretly. For in both, but particularly in the first, the wound was concealed to a superficial observer. And they may have had an idea, from the frequency of "flooding" in females, that their deaths might have been supposed to have happened either from this cause, or by accidentally injuring themselves by sitting down upon some sharp body. For, it is a curious fact, that in both cases the probable murderers * were the first to go for medical aid to the deceased.

Both cases also show, that wounds of the external parts of generation in the female may prove fatal by excessive hemorrhage; the peculiar structure of the parts, consisting of erectile spongy tissue, which is very vascular, giving rise to a continued, steady, though not very rapid, flow of blood.

In both cases the defence set up by the pannel's counsel of the deceased having cut themselves by having accidentally sat down upon broken sharp bodies, was certainly plausible, and could only be controverted by the careful examination of the nature and form of the wounds, and a comparison of them with the alleged inflicting bodies. In both cases this was of great importance, as the deceased did not live to narrate the causes of their wounds; and in both, it appears to me, that the inferences deduced were beyond the possibility of doubt.

ART. XII.—*Case of Poisoning with Corrosive Sublimate.* By ARCHIBALD BLACKLOCK, Esq. Surgeon, Dumfries, and lately Surgeon, R. N.

ABOUT eight o'clock on Sunday morning, 27th February last, Mr ——, aged 50, swallowed upwards of a drachm of corrosive sublimate dissolved in three gills of water, which was in the house for the purpose of destroying maggots on sheep. He had scarcely got it down when he began to retch, and to complain of constriction in his throat, accompanied with a burning sensation and difficulty in swallowing. It was fully two hours before I saw him, and, in the interim, he had taken some Florence oil; and the surgeon of an adjacent village had given him half a drachm of the sulphate of zinc. On my arrival, Mr —— was still retching and bringing up mouthfuls of thick mucus mixed with blood, and had just had a stool of the same description. Before this he had had two natural evacuations, which were attributed to an aloetic pill taken the preceding evening. Pulse 120 and feeble; tongue white and moist; hiccup very troublesome. He describes the constriction and difficulty in swallowing as occurring pretty far down the gullet.

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* Though the Duncans got off by a verdict, by a plurality of the jury, of "not proven," yet there could be very little doubt of the guilt of one of them. It was impossible, however, to ascertain which, so that both were transported for *assault*.

During the whole of this day the symptoms continued much the same; but towards evening the retching was not so frequent, and he swallowed with less difficulty. The countenance was a little flushed.

28th.—Has frequent and copious discharges of bile, both by vomiting and purging,—in fact, complete cholera; pulse upwards of 100 and feeble; countenance is flushed, and fuller than usual; thirst is so incessant as to cause him to ask for milk every two or three minutes, notwithstanding the distress he experiences in getting it down; hiccup is also very distressing; has made no water since the poison was taken, not even when at stool, and feels no inclination to do so. There is neither fulness nor uneasiness any where in the abdomen except about the pit of the stomach, and there gentle pressure gives pain.

March 1st.—Vomiting of bile continues, and, occasionally, large pieces of curd are brought up with it; purging has ceased; complains of burning heat in œsophagus and rectum, and of numbness and want of feeling in his legs; pharynx is dark-red, and pressure externally excites pain; pulse 100, soft, and weak; is inclined to sleep but cannot for the hiccup; has not made water; abdomen is soft, and compressible, and the pressure creates no uneasiness, except about the region of the stomach.

2d.—The symptoms are much the same as yesterday; bowels have moved once, and the evacuation, although scanty, is pretty natural.

3d.—Thirst; burning sensation in the gullet and rectum; difficulty in swallowing and suppression of urine continue; retching is not so frequent, and the matter vomited, as well as what is passed by stool, is still bilious; sleeps occasionally in spite of the hiccup, which occurs with great regularity twenty-six times in a minute; countenance flushed; pulse 100, soft and feeble; tongue white and moist.

4th.—Since yesterday there has been very little alteration in the symptoms; breath is fetid, but the mouth is by no means sore, and there is no ptyalism; the numbness of his legs continues, and his arms are now affected in a similar way, but in a less degree; urine is still suppressed.

5th.—Pulse is almost imperceptible at the wrist; complains of difficulty of breathing, and frequently requests to be set better up in bed; hiccup continues, and he now and then vomits a little bile; cannot swallow; died about noon.

Remarks.—In detailing this case, I have purposely omitted the daily treatment, as I conceive the symptoms can alone be of any importance or value to the medical jurist and toxicologist. I may, however, briefly observe, that milk, and the white of eggs beat up with water, were the only articles administered as antidotes. The milk our patient liked, and drank greedily from the moment I arrived and presented it to him; the other had to be pressed on him, and he took of it but sparingly. The rectum was frequently washed out with enemata of milk or gruel; and once (1st March,) he took a little castor oil rubbed with the yolk of an egg, and two or three ounces of water. Leeches were applied in considerable numbers over the stomach, lumbar region, and sides of the neck, and the bleeding encouraged by fomentation. Laudanum mixed with mucilage of gum-arabic was sometimes given to allay irritation and prevent hiccup; and a blister was applied, partly with the latter intention, to the pit of the stomach. His nourishment consisted of milk, sowens, and barley-water. Mr ——— made water on the morning of the 27th, shortly before he swallowed the poisonous solution. He never afterwards voided a single drop, or felt the slightest inclination to do so. From the morning of the second day the symptoms strongly resembled those of cholera, with the exception of the flushed countenance, which I certainly never observed in that disease, and I have frequently had to treat it both in this country and within the tropics. The suppression of urine must also of course be excepted. The fetor of the breath, which was observed towards the termination of the case, I am inclined to attribute more to the effects of the poison on the stomach and gullet, than to mercurial erethysm. I regret exceedingly we could not obtain leave to open the body. Outwardly there was no unusual appearance.

Dumfries, 28th March 1831.

Art XIII.—*Case where a large quantity of Arsenic was entirely expelled from the Stomach by Emetics two hours after it had been swallowed.* By William Kerr, Esq. Surgeon, Paisley.

On the evening of the 1st January 1831, I was requested to visit a man who had a short time previously swallowed a quantity of arsenic with the intention of poisoning himself. I was informed, that at half-past eight o'clock, immediately after finishing his tea, he took out of his pocket a small packet containing a white powder, which he began deliberately to lick, and wash down with some cold water. He had almost swallowed the whole, when he was discovered by his son, who, with considerable difficulty, extracted from his mouth a small portion of the powder. This being suspected to be poison, was immediately carried to a neighbouring apothecary, who, from the smell it emitted when thrown upon burning fuel, pronounced it to be arsenic. A messenger was then dispatched for me; but the distance being considerable, I did not arrive at my patient's house till at least an hour after the poison had been swallowed.

The person whom I was called to visit was a pretty muscular man about fifty years of age. He was quite sober, but had, I learned, during the course of the day, drunk a few glassfuls of spirits, perhaps to raise his courage for the deed he was about to execute. When I entered, I found him so resolutely fixed on self-destruction, that I began to suspect he would not swallow emetics without coercion. In a short time, however, he consented to do whatever he was directed; and at 9 h. 40 m. swallowed a pretty large dose of sulphate of zinc and ipecacuan. Notwithstanding the administration of more of these emetics, and tickling his fauces with a feather, he did not vomit till 10 h. 30 m., two hours after the arsenic had been swallowed; at which time he had taken seventy-five grains of the sulphate of zinc, and 180 grains of ipecacuan. The vomiting was not copious, and the tendency to retch almost immediately ceased. Seeing this at 10 h. 50 m. I gave forty grains of the sulphate of zinc, which twenty minutes afterwards produced one fit of vomiting. Becoming apprehensive that I would not be able completely to evacuate the stomach by doses of emetics, I resolved to take the assistance of the stomach-pump; but I had no sooner introduced the œsophagus tube than he caught hold of it, and drew it out, positively declaring if his life could not be saved by means of emetics, that he would not submit to any other measure. At 12 h. 10 m. I administered forty grains of sulphate of zinc, and fifty grains of ipecacuan, which in twenty minutes produced vomiting. At 12 h. 45 m. twenty grains of sulphate of zinc were given, which caused retching, but did not excite vomiting. I left him at half-past one o'clock. All along he denied having any pain, and no expression indicative of pain escaped him, so that I am disposed to believe his assertiom. He complained, however, of exhaustion, and several times entreated me to let him alone. He swallowed altogether 175 grains of sulphate of zinc, and 230 grains of ipecacuan.

At my visit next day I learned, that, from the time I left him, he had not vomited till seven o'clock, A. M. when he threw up a few ounces of transparent liquid, pretty strongly tinged with bile. He had no complaint except of exhaustion, which perhaps arose in part from the powerfully debilitating influence of arsenic, and certainly was in part produced by the sickness and fatigue he had undergone the preceding evening. For a few days he complained of weakness, and was mostly confined to bed, but soon after he was able to resume his usual employment.

Before leaving him after the cessation of vomiting, I caused the whole of the liquid part of the matters ejected to be put into bottles, which were immediately carried to my house. The second vomiting was added to the first, and consisted, besides the water he had drank when retching, of the food he had eaten at tea, and a large quantity of mucus so viscid as subsequently to oppose a very considerable impediment to straining through a gauze filter in the process of analysis. I regret that I only brought with me the fluid part of the matters vomited, and also that I did not inspect the solid part, in order to discover whether it contained undissolved particles of arsenic. Every necessary object, however, was gained, for, on analysis of the more fluid part, arsenic was found in it in considerable quantity. The third vomiting was not very viscid, and, after a careful analysis, was found to be free from arsenic. The fluid part of the first and second vomiting filled three and a-half quart bottles, and that of the third nearly two.

Both on the night on which my patient swallowed arsenic, and since, he has uniformly affirmed that he purchased altogether three quarters of an ounce, and that, with the exception of the small quantity which his son forced out of his mouth, he swallowed the whole of this quantity,—a testimony which is rendered very probable by the diminished sensibility of the stomach to the stimulus of emetics. When a large quantity of arsenic is swallowed, vomiting seldom occurs, or if it does take place it soon ceases, and the patient may die without irritant symptoms, and with those only of some violent nervous impression. In a case related in the Medical and Physical Journal, and referred to by Dr Christison in his work on Poisons, the quantity of arsenic was considerable, and vomiting never occurred even though emetics were given to provoke it; and had ordinary doses of emetics been given to my patient, there is reason to believe that the stomach would not have been stimulated to contract, and that he would have died without vomiting. Even after the food and all the arsenic were evacuated, his stomach did not immediately regain its natural irritability; for twenty grains of the sulphate of zinc, taken at 12h. 45m. only caused him to retch, but not to vomit.

In reading the directions given by authors for the treatment to be adopted in cases of poisoning, it has often occurred to me that the usual direction to give *large draughts* of liquid both before and after vomiting has begun is not a very correct practice. When the stomach is distended with any tepid drink, what is there to prevent that liquid from passing into the duodenum, and carrying with it some of the poison, which will thus be removed beyond the reach of emetics? This remark is applicable to all poisons. But in the case of arsenic another reason exists for never distending the stomach. In many instances where this poison has been swallowed, vomiting, whether spontaneous or excited by emetics, is exceedingly inefficient in removing it. Even after vomiting continued for thirty-six hours, or so long as six days, arsenic on inspection after death has been found in the stomach.* The entire evacuation of the poison in such cases seems to be prevented partly by its insolubility, and partly by its adhesion to the stomach through the medium of a layer of tenaceous mucus, which is secreted in consequence of the irritation produced by the arsenic. Such being the case, the expulsion of the arsenic can only be expected from strong and complete contractions of the stomach. The placenta is not thrown off from the uterus when the contraction of that organ is trifling, neither is it likely that the cake of adhering mucus containing arsenic will be thrown off by any attack of vomiting which does not effect a great diminution of the cavity of the stomach. When emetics are diluted with large draughts of liquid, as is generally done, I suspect that in the act of vomiting, when the stomach has contracted considerably, say to one-half or one-fourth of its capacity, when distended with the solution of the emetic, that the stimulus to contract being diminished one-half or three-fourths, the stomach will begin to relax before the mucus, and along with it the arsenic have been separated and ejected. Guided by these views in the case which I have just related, comparatively little liquid was given; vomiting was excited by emetics, and continued by emetics mixed or dissolved in rather a small quantity of water. Whenever a tendency to retch manifested itself, a teacupful or thereabout of tepid water was administered, and repeated as soon as vomited. By these means, as the result showed, the stomach was made to contract forcibly and completely, and a sufficient quantity of water was afforded to serve as a vehicle for the expulsion of the arsenic and mucus.

It may be said that in my patient the arsenic was enveloped in food, and was therefore more easily expelled. This, no doubt, was partly the case; but this cause is of itself insufficient to account for the success of the treatment, because two circumstances render it pretty certain that the poison was not so much covered up as to be inactive. In the first place, a quantity of mucus, much more viscid than the healthy secretion from the stomach, was vomited along with the arsenic. In the second place, the narcotic effect of arsenic on the stomach had commenced,—a symptom which never takes place, except from a large quantity of this poison.[*]

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* Christison on Poisons, p. 249.

I have more confidence in offering the preceding remarks to the public, in consequence of having met with another case, in which the practice recommended in them was adhered to with complete success. A man, while enjoying the pleasures of the whisky-shop, was, in consequence of a brawl, thrown into a fit of violent passion; and before this had time to cool, swallowed nearly a drachm of arsenic. I saw him about half an hour afterwards, when I gave a large dose of sulphate of zinc and ipecacuana. This not speedily producing vomiting, was repeated; but about forty minutes having elapsed from the time the first dose of emetics was given, and no tendency to retch taking place, the stomach pump was employed. While I was using it, full vomiting came on, which was promoted by doses of emetics, and small draughts of warm water, repeated after every evacuation of the stomach. This case occurred two years ago; and not having taken an account of it at the time, I cannot say decidedly what quantity of emetics was administered; but, to the best of my remembrance, about half as much sulphate of zinc and ipecacuan were administered as to the person whose case is first related. The matters vomited by this patient consisted, besides the arsenic, of little else than the water he had drunk flavoured with whisky. Whatever may have been the influence of food in protecting the stomach in the first patient, there could be no protection in the present, because the only solid matters ejected, besides particles of arsenic, were the remains of a small biscuit.

Paisley, 15*th April* 1831.

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[*] Perhaps I should add the detection of arsenic in the liquid vomited; but as this liquid contained a small portion of solid matters, and had been boiled before an analysis was made, I have no means of determining what proportion of arsenic had been evacuated in solution, or how much had been enveloped in an undissolved state, among the more solid portions of the contents of the stomach.

ART. XIV.—*Cases of Poisoning by Sulphuric Acid.* By MARTIN SINCLAIR, M. D. Fellow of the Royal College of Surgeons of Edinburgh, &c.

CASE I.—John Capper, aged 27, and of a phthisical habit, swallowed on Tuesday the 29th June, three fluid-ounces of concentrated sulphuric acid, which was immediately followed by excruciating pain at the stomach, retching, and violent vomiting. When called to the patient, about fifteen minutes after the draught had been taken, I found him labouring under these symptoms in a very aggravated degree,—the pain at the stomach being most severe, insomuch that he was compelled to keep his body in a bent position, supported by two individuals,—and the retching and vomiting almost incessant. About four ounces of prepared chalk diffused in a quart of milk were immediately exhibited,* which the patient swallowed in divided portions, at short intervals. A similar mixture, with the addition of one ounce of castor oil, and two ounces of olive oil, was injected *per anum*. By these means the sufferings of the patient were somewhat diminished,—the pain at the stomach being less severe, and the vomiting, although more copious, and accompanied with blood, easier and free from acrid eructations.

The patient was left in a comparatively tranquil state, with instructions to take freely mutton-broth and other stimulants. The following mixture was also prescribed:—

℞. *Pulveris Opii gr. viij. Cretæ preparatæ* ℥*iv. Lactis recentis* ℔*ij. Misce. Sumat æger uncias duas subinde.*

6 P. M.—Four hours have now elapsed since the sulphuric acid was swallowed. The patient is extremely feeble and exhausted, the pulse quick and small, and the skin cold and bedewed with a clammy sweat; the pain at the stomach very severe and the vomiting occasionally urgent, accompanied with the ejection of tough mucus and a dark-coloured liquid resembling coffee-grounds; deglutition considerably impaired, and performed with difficulty, in consequence of which very little of the mixture and mutton-broth have been taken. The glyster has been retained. *Pergat in usu medicamentorum et demulcentium.*

10 P. M.—Nearly in the same state; deglutition more difficult; the respiration also somewhat impeded. *Pergat ut supra.*

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* An attempt was made to throw this mixture into the stomach by means of the stomach-pump; but, owing to the excoriated state of the œsophagus, this was found to be impracticable.

30 June, 9 A. M.—Had a scanty alvine evacuation about 11 last night; passed the night tolerably free from pain, but did not sleep; pulse quick, somewhat fuller; heat of surface moderate; complains of the constant gnawing pain at the stomach, and of the inability to swallow; respiration still impeded. *Sumat Olei Ricini ℥ss. omni bihorio donec alvus responderit.*

1 P. M. Could not swallow the castor oil.

℞ *Olei Ricini, Olei Terebinthinæ āā ℥ij. Decocti Avenæ ℥xxviij. Injiciendum per anum partitis vicibus.*

6 P. M.—Glyster retained; no evacuation from the bowels.

℞ *Olei Crotonis Tiglii gtts. ij. Sacchari Albi ʒss. Misce et divide in chartulas duas, quarum sumat æger unam statim; repetatur dosis, duabus horis exactis, si opus sit.*[*]

10 P. M.—The exhibition of the croton oil produced an acrid burning sensation in the fauces, followed by violent vomiting, which precluded him from attempting to take the second dose; symptoms nearly the same as before; feels extremely weak.

1 July, 9 A. M.—One scanty stool last night; pulse feeble; complains much of the gnawing pain at his stomach, and of an oppression in his bowels, "from want of a free passage through him;" he hangs his head over the bed, supported on a chair, constantly hawking up a tough mucus, which produces a sense of suffocation; breathing laborious; deglutition almost impracticable, and attended with a convulsive cough. He is perfectly sensible of his situation, and prays for death to relieve him of his sufferings.

℞ *Pulveris Aloes ʒij. Decocti avenæ ℔iij. ft. enema statim injiciendum. Injiciantur etiam subinde jusculi Bovini ℥viij.*

1 P. M.—No evacuation of the bowels; pulse feeble; respiration laborious; can swallow only a teasponful of liquid at one time, and that with the greatest difficulty; still complains of the oppression in his bowels. The cuticle covering the tongue was detached this morning.

℞ *Infusi Sennæ ℥ij. Sulphatis Magnesiæ ℥ss. Tincturæ Sennæ compositæ ʒij. fiat mistura partitis vicibus sumenda.*

6 P. M.—Is much weaker; no amendment.

℞ *Tincturæ Hyosciami ʒi. Tincturæ Lavandulæ compositæ ℥ss. Aquæ Puræ ℥i. fiat mistura cujus sumat æger drachmas duas subinde.*

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[*] As the croton oil produces a pungent sensation in the healthy fauces, it was exhibited, in the present instance, to ascertain its effects upon the excoriated fauces.

The patient gradually sunk, and expired at 9 P. M., having survived fifty-five hours. He retained his faculties to the last.

Appearances on Dissection.—The internal surface of the mouth, pharynx, and œsophagus, was completely corroded, and in the course of being detached; that of the mouth, commencing at the lips, being of a whitish, and that of the pharynx and œsophagus of a brownish, colour.. The rima glottidis was contracted; the epiglottis swollen, and, with the top of the larynx, much inflamed. The cardiac orifice of the stomach was hard and contracted. The stomach contained a pultaceous mass, which consisted of carbonate and sulphate of lime, bile, and the secretions of the stomach. When cleared of these substances, the cavity of the stomach was found to be much diminished in size; its internal surface was contracted, corrugated, puckered up into folds similar to the valvulæ conniventes of the small intestines, but much larger. On the great arch towards the cardia a large patch in a high state of inflammation was observed, where the sulphuric acid seemed to have expended its influence; the colour was in some parts of a deep red, in others of a chocolate brown, and in others verging to black; the consistence of this patch was firm, without any separation of its layers; its size was about four inches in diameter. On the great arch, also, about three inches from the pylorus, which was healthy, a softening and corrosion was observed, but without any appearance of surrounding inflammation. This alteration of structure did not appear to arise from the action of the sulphuric acid, but to originate from the *post mortem* agency of the gastric juice. The intestines, principally the smaller, were distended with flatus, and highly inflamed on the peripheral surface, which was tense, shining as if varnished, and beautifully arborescent from the injection of the minute vessels. The internal surface was healthy; the omentum was also inflamed; the remaining abdominal viscera were healthy. The brain and thoracic viscera were not examined.

The above case is not presented to the notice of the profession as containing anything novel either in the symptoms or in its mode of treatment, but as exhibiting an incontrovertible instance of the effects of sulphuric acid upon the human system The subject of the case, John Capper, was a young man of regular habits, and of considerable genius; but having been seduced from the paths of rectitude and virtue by a married woman, who taunted him with her affection, promising him marriage when her husband died, and afterwards deserting him, he was impelled to commit this suicidal act, "to be revenged upon himself for having placed any affection on such an unworthy individual."

The case, however, is interesting to the physiologist and practical physician. To the physiologist it exemplifies in a remarkable degree the couservative energy of the stomach in resisting the influence of the most potent irritants; and when we contrast this with the *post mortem* influence of the gastric juce, in causing erosions and perforations of the stomach, as exemplified in the writings of Hunter, Gairdner, and Carswell, we cannot but exclaim that the body is "fearfully and wonderfully framed." As Dr Christison observes: * "When made aware of the rapidity with which other irritating poisons prove fatal, and the slight signs they commonly leave of their operation, we cannot fail to be struck with discovering what the animal frame will sometimes endure from these the most violent of all irritants, and nevertheless recover."

To the practical physician also, the case is not devoid of interest, as exhibiting the effect of treatment by chemical antidotes; and it also teaches us the lesson to administer our remedies, in every case of poison, with the utmost promptitude; and in no case to despair of doing good to suffering humanity. By medical writers, the carbonate of magnesia is recommended in preference to the carbonate of lime, and is certainly superior by producing a saline aperient, by combining with the sulphuric acid. In the present case, however, the carbonate of lime was preferred as having a greater affinity for sulphuric acid, and because, being more easily miscible with liquids, it could be administered in greater quantity in a short space of time.

I omitted to state that Capper was fasting when he swallowed the sulphuric acid,—having taken no food that day excepting a *cup* of coffee, without bread or any other solid, at 9 A. M.

CASE 2.—On Tuesday the 8th of November, I was instructed by the coroner to open the body of John Hilton Morrabin, aged 4 years 10 months, who died at noon the 4th of the same month under suspicion of having been poisoned by his stepfather.

The body externally presented nothing unusual, excepting at the upper lip and angles of the mouth, where several spots about the size of a small kidney-bean were observed. These were of a brownish colour, such as is produced upon the cutis by the action of concentrated sulphuric acid. The lining membrane of the mouth and tongue was of a greyish or rather ash colour, and in the course of being detached; and two erosions about the size of a sixpence were observed on the tongue. The pharynx was so contracted that a probe could scarcely pass the strictured part. Upon laying this open, the internal surface was of a reddish-brown colour, and the lining membrane in part detached, and where it remained it had the appearance of moistened parchment, and came off with the greatest facility. The internal surface of the stomach was corroded in some parts, charred in others, and in the great arch a perforation, about 1½ inch in diameter, was observed. The coats of the stomach were much attenuated towards the perforation, and externally were of a very dark colour, nearly ¾ of an inch around it. The charring could not be removed by washing; and upon part of the charred substance being picked off, the subjacent texture was found of a pinkish or rather delicate crimson colour. The cardia and pylorus were not contracted or otherwise affected; the omentum, liver, intestines, with the peritoneum, were in a state of high inflammation; about six ounces of a deep dark chocolate-brown liquid were found in the stomach and the general cavity of the abdomen, whence it had been effused through the perforation mentioned above. This liquid was, by the instructions of the coroner, analyzed by Mr Davies, lecturer on chemistry, and was found to contain a considerable quantity of sulphuric acid.

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* On Poisons, page 116.

The trachea, larynx, and epiglottis, were much inflamed, and the investing membrane of the latter, as well as of the glottis, was of a whitish colour and elevated, presenting the appearance of having been boiled. The aperture of the glottis was not, however, contracted.

The symptoms exhibited by the child during life, so far as they were elicited at the trial, were frothing at the mouth, burning in the throat and stomach, constant writhing of the body, inability to swallow any liquid, (from its being ejected by the nose as soon as taken into the mouth,) and convulsions of the whole body. These symtoms continued until the child's death, which took place about four and a-half hours after, as was supposed, the administration of the poison. No medicines were administered, as the father "stood over the child till he saw it fairly dead," and "would not send for any doctor."

As the subject of poisoning by sulphuric acid has been recently presented to the readers of this Journal in a very masterly manner by Dr Christison, it is not my intention to offer any remarks on the case, further than to observe that it presents to every unbiassed mind incontrovertible evidence of poisoning by sulphuric acid; and it forms a remarkable contrast in the rapidity of its progress, where no remedial means were adopted, to the case of Capper, which has been detailed above.

The step-father, Moses Fernely, who had always been cruel to the child, was tried for the murder at the late spring assizes at Lancaster; was convicted by the clearest circumstantial evidence; and was executed for the awful crime on the 12th of March, and his body given for dissection.—It appeared in evidence that the child was quite well about seven o'clock; that it was found labouring under the symptoms described a little before eight; and as it died about twelve noon, it consequently survived the administration of the poison about four hours and a-half, as has been noticed above.

Manchester, *4th May* 1831.

CASE XV.—*Case of Spontaneous Varicose Aneurism.* By JAMES SYME, Esq. Fellow of the Royal College of Surgeons, London and Edinburgh, and Lecturer on Surgery in Edinburgh.

VARICOSE aneurism, or a sac containing blood, and communicating with the trunks of both an artery and vein, is a rare occurrence; and the only instances which have hitherto been recorded either of it, or the analogous condition of aneurismal varix, where the blood passes at once from the trunk of an artery into that of a vein, originated from wounds. The femoral, popliteal, and subclavian vessels, and more frequently those at the bend of the arm, have been thus affected, in cônsequence of having their contiguous coats divided by some sharp-pointed weapon; but no instance has hitherto been observed of the opening taking place spontaneously, and I therefore think it right to relate the following case of varicose aneurism, which affected the aorta and vena cava, and occurred without any external violence.

Robert Scott, aged 22, in the beginning of October 1830, began to complain of pain in his back and limbs, throbbing in the epigastric region, and an incessant whizzing noise, which seemed to proceed from the same part. His sufferings became so severe in three or four weeks, that he found it necessary to confine himself to bed, and then came under the care of my friend Dr Robertson, who soon afterwards requested me to see him. He complained greatly of pain in his back, and coldness of his feet; but what seemed to occasion both him and his friends most concern, was the constant noise that has been already mentioned. On examining the abdomen while he lay on his back, I readily felt the pulsation of a large tumour; but it was not so strong and incompressible as that of an ordinary aneurism, and in the erect posture might have readily escaped observation.

The treatment consisted in the use of all those means which tend to moderate the force of the circulation, but proved quite unavailing. The patient's sufferings became progressively aggravated, and a new symptom made its appearance, viz. œdema of the inferior extremities and generative organs. The swelling of these parts attained a degree that I never saw equalled, and occasioned an extraordinary contrast between them and his superior extremities, which were thin and emaciated. In the latter end of January the patient died rather suddenly, immediately after complaining of a pain at his heart.

After death, the œdema, which had previously been confined to the parts below the pubis, diffused itself over the whole of the body, so that when the dissection was commenced by the usual longitudinal incision of the integuments of the trunk, they were found to be distended fully three inches, and a copious stream of serous fluid continued to issue from them, during nearly the whole of the subsequent examination.

In order to expose the disease completely, I removed the thoracic and abdominal viscera, and then traced the aorta from its commencement downwards. Having found an aneurismal tumour seated at the bifurcation of the artery, which adhered intimately to the vena cava and vertebræ, I dissected out the iliac vessels, cut them across some inches beyond their division, and then sawed away the bodies of the lumbar vertebræ, together with the promontory of the sacrum.

On examining more particularly the preparation thus detached, we observed that the tumour was of a flattened oval figure about the size of a large orange; that it adhered to, and had caused absorption to some depth of the bodies of the three lowest lumbar vertebræ, and that it was intimately connected with the vena cava, which appeared much flattened, distended, and thickened. It was now suggested that there might be a communication between the aneurism and vein, and on making a small opening into the sac, so as to evacuate its contents, we found this actually to be the case. Immediately above the bifurcation of the vena cava there was a round aperture somewhat larger than a sixpence, which afforded a free entrance into it from the aneurism.

The engraving represents the form and relative situation of the aneurism, and the preparation itself may be seen in my museum.

2, *Forres Street*, 18*th May* 1831.

ART. XVI.—*Case of Periostitis of the Head successfully treated by free division.* By ARCHIBALD BLACKLOCK, Esq. Surgeon, Dumfries, late Surgeon to the Royal Navy.

OCT. 12, 1830.—MR W. V. aged 24, about eighteen months ago, began to be affected with severe pain in the left side of his head, which has seldom or never intermitted, although there have been daily remissions, or periods of mitigated suffering. The pain is most distressing during the day, and least so when warm in bed. He feels always cold when not in bed, and inclined to be near the fire, where he sits in silence, holding his head occasionally with both hands. Pulse seldom under 100, and often much above that number, and of moderate strength. Appetite bad; thirst distressingly urgent; and he can hardly be prevailed upon to resist drinking large draughts of cold water. Tongue sometimes covered with a white film, but upon the whole pretty natural. Bowels regular. Perspires a good deal in his sleep.

Mr V. consulted me by letter five or six weeks ago, in which he stated, that he had been attended through the greater part of his illness by two practitioners of eminence and experience, under whose direction he had taken, in large doses, carbonate of iron and sulphate of quinine, mercury and sarsaparilla, and other medicines, with which he was not acquainted. The head also had been leeched and blistered. Having received little or no benefit from these remedies, he went in July last to Dublin, for the purpose of consulting Abraham Collins of that city, who was of opinion that the pericranium was thickened, and recommended its division with the scalpel. This, however, was not done. In my reply to Mr V., I advised him to try the effect of the arsenical solution, and, at the same time, called attention to the recommendation of Mr Collins as a means of relief. He took the solution in doses of six or seven drops twice a-day for nearly a month without any amendment, and this morning he came to Dumfries to be under my care.

Still suspecting the disorder to be of a neuralgic nature, I again tried the arsenical solution, administering the doses myself, and pushing the medicine as far as I considered safe. I afterwards cupped him on the back of the neck to twelve ounces. His sufferings progressively increasing, he went by the mail to Edinburgh on the 24th Oct., and saw Dr Abercrombie the same evening, who wrote to me as follows. "After all that has been done without benefit in this distressing case, I have no hesitation in stating to you at once the measure which I would recommend. It is a free crucial incision through the portion of the scalp which is tender to the touch. This seems to be about the size of a dollar, and I would carry the incisions quite through the pericranium, and dress them so as to prevent adhesion, and let them heal slowly, with free suppuration. This will certainly be attended with present relief. Should the benefit not be permanent, I would repeat the incisions more freely, and always quite through the pericranium, and endeavour to keep them longer in a discharging state." Next day Mr V. returned to Dumfries; and on the forenoon of the 26th, I made a very free crucial incision through the pericranium covering the posterior part of the left parietal bone, and quite traversing the part most tender to the touch. The hemorrhage was profuse. Having ascertained that the pericranium was only partially divided, I drew the scalpel alongst it, which produced excruciating pain, and a kind of convulsive trembling, if I may so speak, over all his body, although he had not previously complained. The bone appears sound, but, from the acute suffering which attended the division of the pericranium, there can be no doubt of that membrane being in a morbid condition. I think it is thicker than usual; and in this opinion I am joined by Mr M'Lauchlan, an intelligent surgeon here, who was present at the operation. The scalp, indeed, at the line of division is unusually thick.—10 P. M. Has been quite free from pain since the operation, and uncommonly cheerful.—Oct. 27th. He rested well during the night, without uneasiness in the wound, or on that side of his head; feels a little uneasiness on the opposite side, to which he has not been accustomed. Pulse 100.—4 P. M. The pain has left the right side of his head, where it continued to give some slight annoyance the greater part of the day. He complains now of deep-seated pain in the occiput. No uneasiness near the incision. Pulse 120.—Oct. 28th. Had a good night; feels a little pain in the right side of his head, but not the slightest uneasiness in the left. Says he has not for many months been so exempt from all suffering on the left side of his head as since the operation. The deep-seated occipital pain complained of yesterday evening is gone.

Oct. 29th.—Slept well during the night, and feels no pain whatever this morning.—Oct. 30th. Since yesterday morning, has occasionally had a little uneasiness in the right side of his head, and towards the occiput. Pulse 96. In the afternoon the dressing was removed after a poultice had been applied for a few hours to facilitate separation. The wound, which was very open, was discharging sufficiently for the time. The pericranium is extremely irritable, the gentlest touch with the probe causing agony. Does not complain when the probe is pressed against the other parts of the wound.—Nov. 2d. Has been almost entirely without headach since last report. Wound has a healthy aspect, but is still exquisitely sensible at the bottom. When the pericranium is touched, he compares the sensation to a sharp instrument passing through the brain.—Nov. 5th. For the last three days, a little pain has come on toward evening; it is principally felt in the lower part of the occiput, and occasionally shoots as it were through the brain to the left eye. This suffering soon goes off after retiring to bed. There is no uneasiness in the wound, nor in its immediate neighbourhood.

Nov. 12th.—Has had no headach, nor uneasiness of any kind since the 5th. The wound is to-day quite healed, notwithstanding the nicest care has been taken to prevent its closing, by daily filling it from the bottom with small pieces of lint spread with resinous ointment.—Nov. 17th. Continues well, and this afternoon he set off in good spirits for Liverpool. It may be proper to add, thar Mr V. has taken no medicine, with the exception of a little Epsom salt, since the operation.

After Mr V. had quitted Dumfries about two weeks, I was somewhat disconcerted by receiving from him, on the 5th December, a letter, in which he states; that his headach had returned, and for some days had been so severe as to induce him to think of having the scalp and pericranium again divided. This he ascribed to the accident of having struck his head a few days after returning rather forcibly against a bird-cage suspended from the ceiling. The injury was received near the spot where the incision was made, and caused very acute pain at the moment. A few days after he again came to Dumfries, and put himself under my care with the purpose of having the operation repeated.

On carefully examining the head, however, I found that the suffering was not in the situation in which the parts had formerly been divided, but in the lower part of the occipital region towards the nape of the neck. In the latter part I introduced a seton, with the view of establishing a thorough counter-irritation; and even since the discharge became copious the pain has seldom or never been troublesome. I conceive, therefore, that since the latter pain has no connection with the former seat of disease, the crucial division of the scalp was completely effectual in removing the periosteal inflammation, and that the cure is now (14th February 1831) completed.

By a letter dated the 19th current, (May,) Mr V. informs me, that he removed the seton some weeks ago; and while he states he is in good health, he makes no mention of the return of the original complaint, nor of the pain of the inferior occipital region, for which the seton was inserted.

I cannot say whether the second affection, for which the seton was introduced, was connected with the previous pericranial disease. It is, nevertheless, probable, that the blow on the head removed in some measure that morbid action which had been so recently arrested by the incision.

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In this manner, therefore, this case, which completely baffled, during the long period of eighteen months, the whole class of tonics, as well as the most energetic treatment by leeching, blistering, mercury, &c. was permanently cured by free incisions.

In the course of the last few years I have met with two cases similar to the above, in women between forty and fifty years of age, which were ultimately treated by incision; and in both instances I found the bone eroded over a space nearly as large as a sixpence. The incisions were healed by granulation, and no exfoliation occurred in either case. The relief, although considerable, and in the end complete, was by no means so immediate as in Mr V.'s case.

The same painful affection, no doubt, sometimes attacks the covering of other bones as well as that of the skull. I have met with it on the front of the *tibia*, and in one instance of this kind the patient was a little boy not more than five or six years old, who, as far as could be ascertained, had not received any external injury, and in whom it was pretty evidently an idiopathic disease, an incision through the periosteum at once put an end to it.

I think, with Dr Crampton, who has written so well upon this subject, that *periostitis*, both acute and chronic, very often occurs unconnected with any specific disease, and in such cases mercury, instead of mitigating, aggravates the suffering. It appears also that this disease is, in its commencement, strictly confined to the *pericranium*, from which it extends, if not interrupted by an incision, to the subjacent bone, and, I presume, ultimately to the dura mater. That it proceeds from the *pericranium* to the bone was well exemplified, I think, in the cases of the two women alluded to; for although the bone was bare and a little eroded in both of them, the disease proceeded no further after the pericranium was divided; no exfoliation, as I observed, took place. It is now upwards of two years since the last of these cases occurred, and the patients are still living.

It is, moreover, not a little remarkable, that inflammation of the pericranium, when produced by disease *extending from the subjacent tissues*, is by no means an acutely painful affection;—it is very frequently quite the reverse. In 1813, I received a young French soldier into the Pegase Hospital Ship at Portsmouth, for a slight febrile attack, so very slight, that the late Dr W. B. Smith, who had the principal charge of the sick, doubted the propriety of his admission. A day or two after, my attention was drawn to a little fulness over the root of the left mastoid process, which was tender to the touch, and communicated an indistinct feeling of fluctuation. It was immediately punctured, and a trifling quantity of a thin sanious liquor escaped. He now told us, that he had been long subject to a purulent discharge from his left ear, which for a few days had ceased. He had not been troubled with headach. Next day he was comatose, and soon died. The pericranium was found detached under the swelling which had been punctured, and the bone porous, so much so, that at several points the probe could be easily passed to the brain. The dura mater was more extensively separated from the bone than the pericranium, and covered, where the separation had taken place, with purulent matter of a greenish tint. The left lateral sinus terminated in a *cul de sac*, where it enters the *foramen lacerum*, and, instead of blood, contained pus.—I mention this case merely as an example of disease proceeding *from the interior to the exterior* of the skull, and of the little disturbance which is occasioned by the pericranium becoming inflamed and disorganized even in that way. It is not at all a rare case. Had it been so, I would have hesitated to introduce it here, for what is very uncommon, is seldom of much importance in pathology.

Dumfries, *23d May* 1830.

ART. XVII.—*An improved Instrument for Extracting Teeth.* By THOMAS HARDY, Esq. Fellow of the Royal College of Surgeons, Edinburgh.

SINCE my communication to this Journal in 1819, describing the double fulcrum tooth-key, I have had upwards of ten years' additional experience of its operation; and I am more than ever satisfied that it extracts firm molares with less pain and danger to the patient than any form of tooth-key I am acquainted with. Still the tooth-key has faults inseparable from its principle, which every operator must have felt; for instance, the claw requires to be placed and held *in situ*, by a finger of the hand not occupied with the instrument, which, greatly interfering with the sight, often compels him, after placing the instrument, to finish the extraction in the dark, trusting to the accuracy and continuance of his first position. In many cases, when pressure has commenced, the relative position of the claw, fulcrum, and tooth, is very different from what the operator would have wished or risked, had his sight been uninterrupted.

Again, when a tooth firmly imbedded in the socket is merely unseated with the tooth-key, and is felt to be in a manner locked, (no unfrequent occurrence,) the experienced operator knows that the consequences of pulling onward are dreadful torture to the patient, and disastrous to either the tooth or the socket, the direction of the power becoming much too lateral. At this painful moment the instrument has to be withdrawn and another substituted,—at least where the safety and relief of the sufferer is more the object of the surgeon than showing off his *only one pull.* Another disadvantage which attends the tooth-key is, that in most cases it is exceedingly apt to slide over the neck of gum and socket round the tooth, (which in some individuals is very prominent,) into the depression beyond, making the fulcrum too distant from the point of the claw, unless a compress of lint is used, the size and position of which requires some address in adjusting.

These, among other reasons, have led many dentists to use the forceps wherever possible, but in the removal of firm molares in healthy sockets, they are very ineffectual, setting aside the chance of that frequent accident, clipping across the crown of the tooth.

I beg leave, through your valuable Journal, to recommend to all my brethren an instrument which I have long contemplated, and for some time past have used, hitherto with the most desirable success. It is an union of the tooth-key and forceps, extremely simple, one claw of the forceps being opposed by a double fulcrum of steel, instead of by another claw. Two instruments, right and left, are, of course, necessary for the different positions. By this combination, the operator has the power of unseating a tooth on the principle of the tooth-key, the choice of going on with it, or turning over to the opposite side, or of twisting, if necessary, all without shifting hold; and during the process, besides having no obstruction from the fingers, to his view of the parts, he has no anxiety about the alteration of the position of the fulcrum, over which he has instantaneous control.

I sincerely trust that others will find this instrument as successful in its operation as I have found it. It is my greatest desire, in my profession, to render safer and less painful, that very frequent operation, extraction of the teeth.

11, *Duke Street, Edin.*
Oct. 28, 1830.

ART. XVIII.—*Observations on the Treatment of Mania and Delirium Tremens by large doses of Tartar Emetic.* By JOHN SPENCE, Esq. Surgeon, Otley, Yorkshire, Member of the College of Surgeons, London, Licentiate Apothecary, Surgeon to the Carlton Workhouse, and Ilkley Bath Charitable Institution, &c. &c.

THE methods of treating maniacal attacks are so far from being either uniform or successful, that every rational attempt to improve the treatment of these diseases deserves at least attention and a fair trial. Though I do not pretend to offer any thing new on the pathology of mental disorders, and I am willing to acknowledge that my methods have been somewhat empirical, I think, nevertheless, that to those engaged in the management of the insane, it may be interesting to know, that from one remedy exhibited in a peculiar way I have witnessed the most satisfactory results. This agent, which is tartar emetic, is by no means new or unknown in the treatment of maniacal disorders; but the mode of administration is certainly somewhat new. It consists in giving large doses of this substance, nearly in the solid form, to prevent it from producing such vomiting as must eject it from the stomach, and in repeating this occasionally with other medicines, until the mental faculties become more steady, the thoughts coherent, and the actions calm and regular.

The doses vary from 5 to 30 grains, according to circumstances, given each half hour or hour, until several well-marked effects begin to take place. The first sensible effects of tartar emetic administered in this manner are extreme weakness and relaxation of the whole system, with peculiar depression of the nervous system. There is little or no vomiting, and the direct operation of the mineral salt on the stomach is manifested in retching only. When vomiting takes place, indeed, it generally expels the medicine from the stomach, and thereby prevents it from exercising its beneficial effects. There is occasionally slight discharge from the intestinal tube, and in some cases liquid dejections are discharged. Its influence on the urinary secretion, I found it impossible, from the peculiar circumstances of patients, to determine; but I have reason to believe that the kidneys share in general in the effects produced on the vascular secreting system. The skin, however, is the organ on which the effects of the substance are most conspicuous and considerable. From being dry, cold, and unctuous, or irregularly chilled and heated, it becomes first generally relaxed and uniformly moistened. Simultaneous with this in general there is a remarkable improvement in the state of the mental faculties. The maniacal excitement gives way to a state of composure; violent actions and demeanour are followed by tranquillity and general quiescence; and the patient recovers consciousness of his state, and begins to express himself with order and coherence.

I have not yet been able to determine the kinds of mental derangement in which this remedy is most successful, and in which, probably, it is most urgently indicated. I do not imagine that it can be useful in all, nor do I think that in every form it can alone be relied on. I may state, that the cases in the treatment of which I have been most conversant, are maniacal attacks in females, and *delirium tremens* in men. I have found it highly beneficial in maniacal attacks in the former sex, when either connected with disorders of the menstrual function, or occurring after delivery; but I have reason to believe that in all cases of acute or recent mental derangement, before the disorder has assumed a confirmed form, and begun to pass into fatuity, it will be the best remedy which can be employed. On the mode of its operation I cannot even pretend to offer any opinion. It seems to operate energetically in lowering the excited state of the nervous system, and it evidently exercises great influence on the vascular system. The latter circumstance may be the cause of the former. But without farther speculation, I shall proceed to detail the particulars of three well-marked cases, in illustration of the foregoing remarks.

CASE I. *Mania.*—On Tuesday the 25th November 1828, I was requested to visit Mrs ——— aged 34 years, the mother of three children, and residing eight miles from Otley. She was of a plethoric habit; and having been labouring for some time under highly excited feelings, owing to some very unpleasant family circumstances, she had been previously attended by two professional gentlemen of considerable eminence for some time before I saw her, without receiving that benefit which the family thought she ought to have done. When I first saw her I blooded her *ad deliquium animi;* but as soon as she recovered from the effects of blood-letting, she became so unmanageable, that she was obliged to be tied firmly down in bed, when I ordered the following medicine to be given to her.

℞ *Calomel. gr. iv. Ext. Colocynth C. gr. vj. M. ft. Bol. Mitte iv. Cap. i. cum ℥ij. ex. Mist. sequent. omni 3tia hora.*

℞ *Magnes. Sulphat. ℥ij. Antimon.. Tartariz. gr. ij. Syrup. Simplic. ℥ss. Aquæ Menthæ ℥vss. M. ft. mist. sumend. ut supra. Applic. nuch. Empl. Lytt.*

26.—Symptoms not relieved. The medicine operated freely; but from the unmanageable state of the patient, it was impossible to ascertain the frequency of the pulse, as she kept in constant motion.

℞ *Pilul. Hydrarg. gr. v. Ext. Colocynth. C. gr. iv. Pulv. Ipecac. gr. i. Ol. Carui, gtt. i. Mft. Bol. Mitte vj. Cap. i. cum Coch. ij. larg. ex Mist. sequent. ter in die.*

℞ *Magnes. Sulph. ʒx. Infus. Rosæ ℥vss. Syrup Rhoed. ℥ss. Mft. mist. sum. ut supra.*

27.—Symptoms aggravated.

℞. *Antimon. Tartariz. gr. iv. ft. Pulv. i. Cap. i. om. 4ta hor. Mitte. vj.*

28.—No better; bowels open.

29.—Her husband came for some medicine, saying the powders had kept her more quite than any thing she had yet taken. But when he had got about half-way home, he was met by a messenger on horseback, saying that his wife was much worse; consequently, he came back in a great hurry, requesting that I should return with him immediately, as they did not know what to do with her. On my arrival she had got loose; barred the door, keeping two females shut up with her; and declared in her rage, that she would run them through with a large knife which she held in her hand, if they interfered with her. She then threw up the window, tore her clothes off, and threw them and the bed-clothes into the street. Bottles, pill-boxes, &c. shared the same fate. The only way of getting to her was by the husband forcing open the door; and the moment he did so, she ran towards him, declaring she would stab him. To save himself, and get proper hold of her, he was under the necessity of throwing her down, by which means she was again securely fixed in bed. I then held her by the nose, compelling her to open her mouth, until the following dose was given her.

℞ *Antimon. Tartariz. gr. xxx. Aquæ puræ ℥i. M. ft. Haust. statim sumendus. Applic. capiti Empl. Lyttæ.*

In about a quarter of an hour she began to be sick, and retched several times, but did not vomit. She lay as if every muscle was so relaxed that she had not the least power of moving herself, and soon after said, "I won't have any more of that stuff, it makes me so ill and sick." This was the only sensible sentence she had uttered from the beginning, and forcibly illustrates in this case the wonderful control tartar emetic has over the nervous energy of the brain, and in lessening the circulation of the blood. In three hours after taking the thirty grains of tartar emetic, I ordered five grains to be given every five minutes until seventy-five grains were taken.

Dec. 2.—Better; bowels open; tongue cleaning; less thirst; pulse 110 in the minute. *Cont. Tart. Antim. ad gr. v. ter in die.*

3.—℞ *Pil. Hydrarg. gr. v. Ext. Colocynt. C. gr. iv. Ipe-*

cac. Pulv. gr. i. Car. Ol. gtt. i. M. ft. bol. Mitte vj. Capt. i. ex Coch. ij. maj. Mist. seq. ter de die.

℞. *Infus. Rosæ,* ℥*vss. Acid Sulph. dil.* ʒ*ij. Syrup. Papav. E.* ℥*ss. M. ft. Mist. ut s. s.*

Pulse 100 in the minute; tongue much improved; bowels free; all the other symptoms more favourable.

4.—I did not see her, but was told she was as well as the day before.

Rept. Bol. vj. alter. Mist. acida ut a. s.

6.—Much better; talked quite rationally; tongue clean; appetite good; bowels open; and free from pain.

9.—*Rept. Bol. vj. alter. Mist. acida ut a. s.*

19.—I met her riding out on horseback perfectly well, and she has continued so ever since, now more than eighteen months.

In bringing forward this case, I am anxious to show with what safety large doses of tartar emetic may be given; though at the same time, I must caution the reader, (particularly the young practitioner,) that it is only under certain circumstances, and under the influence of certain diseases, that I would hazard such doses. I cannot undertake to give a graduated scale of doses of tartar emetic to patients labouring under mania. The practitioner's discretion, and the peculiar circumstances of the case, must be the criterion by which he must fix his standard. My object in giving the large doses of tartar emetic was, that it should act as a most powerful relaxant; and with this view, I gave it in as small a quantity of liquid as possible, so that it might not produce vomiting. Thirty grains were given at once for a dose. In three hours afterwards five grains were given, and repeated every five minutes, until seventy-five were taken. In four hours and a quarter, no less than one hundred and five grains were taken of this powerful medicine, and with the very happiest effects. It may be proper to mention, that the tartar emetic was of the very best quality, which was proved by subsequent practice. In the greater number of febrile affections, vomiting is easily excited; while in other affections, as mania, melancholia, hypochondriasis, apoplexy, and *delirium tremens*, &c. &c. it is excited with much more difficulty.

Case II.—*Mania Menstrualis.*—Mary Knotts, aged 23 years, a patient in Carlton Work-House. In April 1829, I was requested to visit her, when I found she was labouring under *mania;* and on making inquiry into the causes of her complaint, I was informed that she had great difficulty in menstruating, and that her attacks appeared regularly in a few days previous to menstruation. Her sleep was much disturbed, and she became more and more restless and uneasy, tearing her clothes, devouring her own food and that of her companions, with every thing eatable that she could procure, with the utmost rapidity. Small doses of tartar emetic were given her, with little or no benefit for some time. I then began with five-grain doses, which had the best effects. In a short time after taking the first five grains she became sick, and this was followed by a profuse discharge of saliva from the mouth. In the course of an hour she vomited freely, and it also acted upon the kidneys. She then continued to cry for an hour or two, which terminated in a profound sleep, from which she awoke quite sensible and well. Since April 1829, up to the present time, she has had twelve different attacks, with similar symptoms to the first one, and has been every time treated in the same way, by increasing the dose,—now increased to eight grains, with the same happy results.

My attention being directed for some time back to the cure of mania by tartar emetic, I was led to give it a fair trial in the cure of *delirium tremens*, and I am happy to say with the best effects.

For the sake of brevity, I distinguish the disease into three different stages;—*First*, that of depression; *second*, of excitement; and, *third*, of sleep. The treatment of *delirium tremens* by opiates in young subjects, I consider to be both rash and dangerous, because we have other remedies which can alleviate and ultimately stem the torrent of disease, being safe and easily administered, while opiates are difficult in their administration, and dangerous in their effects. They even load the vessels of the brain; and when they do not command repose, they mask the disease by setting up a train of symptoms similar to those of the disease; and as there is no fixed period for the sleeping stage coming on, and it appears in different cases in two, three, or even five or six days after the stage of excitement has commenced, an unfavourable result might happen in the hands of an active practitioner by giving ten or fifteen grains of opium an hour or two before spontaneous sleep came on. If such a circumstance were to take place, the unhappy sufferer may fall asleep never to awake.

CASE III. *Delirium Tremens.*—Mr —— aged 35 years, who was for many years troubled with a liver complaint owing to free-living, and about four years ago, was addicted to very hard drinking of spirituous liquors, principally brandy, which impaired his appetite very much, and brought on all the symptoms of dyspepsia. He continued to drink, however, despite of every effort to check him, when in a short time he was attacked with tremor in his hands and tongue, accompanied with shiverings in a morning, and great weakness, lowness of spirits, &c. Soon after came on high nervous irritability; believing he was dying, he became very religious and read and prayed most fervently; objects of the most frightful form presented themselves to his imagination; and the next day came on high delirium, with occasional severe fits of epilepsy, during the paroxysms of which, his tongue suffered much injury from the teeth. Having tied the patient loosely down in bed, I gave him occasionally a little brandy and wine, with small doses of opium, from which he received no perceptible benefit during the first two days. I then increased the opium to eight grains of the solid drug, repeating the dose, either in powder or tincture, every six or eight hours, with no better effect, as it never commanded repose, and not doing so, it invariably produced a higher degree of excitement. I then administered ten grain doses of tartar emetic with the effect of removing the disease.

This patient has drank no brandy or other spirituous liquors for the last two years, and has had only two attacks, and these only slight; although he has drank a great quantity of malt liquor, and regularly, for a length of time together, two bottles of port-wine a-day. He has had not fewer than twenty different attacks within the four years, all of which, except the first one, I have treated in the following manner. As soon as delirium came on, he was put into a room well aired, with little light, and secured in bed, with one person to attend him; he had wine occasionally when he would take it; and whenever he became high and unmanageable, he had eight or ten grains of tartar emetic given him, which in a short time produced considerable nausea. This was continued by repeating the dose until he became quiet; and it was regularly repeated whenever the nervous excitement came on, until he again became composed. Leeches were occasionally applied to the temples, the head shaved, and a cold lotion applied to it.

I have frequently seen great advantage from cold affusion; and this I have had recourse to when the patient was restless, during both the hot and sweating stage. In the treatment of *delirium tremens* with tartar-emetic, it is easily administered in a little water or wine, its taste being scarcely perceptible; and from its great and well-known control over the nervous energy of the brain, it lessens the vascular action through that cavity, and brings the patient into a calm state, which renders its administration safe as well as advisable, while at the same time it keeps up a proper action upon the bowels and kidneys.*

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* Though the foregoing cases lead to the inference that tartar emetic may be administered in much larger doses than are commonly given, may it not be feared that an agent which is known to be so irritating as to produce, when forced through the cuticle, pustular inflammation of the skin, may be followed when given in such quantities by erythematic inflammation or ulceration of the mucous surface of the stomach, œsophagus, or throat?—[Editors.]

PART II.

CRITICAL ANALYSIS.

Art. I.—*Die Asiatische Cholera in Russland, &c. On the Asiatic Cholera as it appeared in Russia in the years* 1829 *and* 1830. From the Russian Official Documents. By D. J. R. Lichtenstadt, Professor of Medicine, &c. &c. and Physician at St Petersburg. Haude and Spener, Berlin. 1831. 8vo. Pp. 218.

Throughout the whole diversified objects of medical science, there is perhaps none of so much interest at the present moment as the Asiatic or Epidemic Cholera. Its extensive diffusion in the course of a few years over a great part of the eastern world, its almost unexampled mortality, the appalling swiftness with which it brings its victim to the grave, and the mystery which continues to hang over the cause of its origin and progress,—have for some time rendered it an object of attraction to every scientific inquirer who confines not his view to what passes within the narrow circle of his immediate observation.

But in recent times it has acquired even higher claims on the attention of European physicians. During the few first years after it attracted notice in the East, its devastations were confined to the British eastern empire and some conterminous states. But afterwards vague rumours reached civilized Europe of its advance westward; at last in the autumn of 1829, it suddenly appeared with violence at the eastern verge of Europe, on the Tartar confines of Russia; a year afterwards it rapidly advanced nearly 800 miles westward and arrived at Moscow; and now it is well ascertained that it has made its appearance at Warsaw, about 700 miles still farther west. In all this long course, whatever may have been its mode of propagation, it has distinctly shown itself to be comparatively uninfluenced by various circumstances of locality and season, which lessen or extinguish other epidemic as well as endemic pestilences. It is not improbable, then, that the western confines of Europe may ere long be visited in turn; for the prolongation of its course for eight hundred miles more in the direction it has hitherto traversed would bring it almost to the gates of Paris. In the East it has crossed wider seas than divide these islands from the continent of Europe. If it appears among our neighbours, then, we cannot reasonably expect to escape a similar visitation.

We may indeed comfort ourselves with the reflection, that the easier condition of the lower orders, and superior state of general civilization in the western part of Europe will prevent its farther progress. And it is undoubtedly true that for a long time these advantages have protected western Europe from the inroad of epidemic diseases, or greatly limited their ravages. But there is, we repeat, a mystery in the mode of propagation of cholera which, in whatever way it may eventually be solved, has hitherto allowed the physician only to discover that it is not exactly amenable to the laws which govern the extension of other diseases, either of a miasmatic or of a contagious nature; and at all events we fear that in the documents now before us some reason will be found for doubting whether comfort and civilization furnish a sufficient barrier against its invasion.

These considerations, independently of others of a more purely scientific nature, which it would be useless to specify, render it an object of extreme interest to the profession and public in every European state to observe the progress of the disease, as made known by authentic documents. The official correspondence of our medical officers in India, to which ample justice has been done in this Journal, has made us fully acquainted with its phenomena as it presented itself in that part of the globe. Since the publication of their correspondence little new intelligence has reached this country on the subject, beyond a few vague rumours of devastations committed by it in the countries bordering on our Indian possessions, and more recently some scattered notices of its prevalence in various parts of Russia in its progress westwards, communicated chiefly through the medium of the Academy of Sciences and Academy of Medicine at Paris. At length, however, an authentic account has been published of its first entrance into Russia, and subsequent diffusion through a part of that empire; and the original official documents have been rendered generally accessible by the activity of *Professor Lichtenstädt* of St Petersburg, who in the work now in our hands has translated into German all the material parts of the reports. We have taken the earliest opportunity of bringing this interesting treatise before the reader.

The work consists of two parts. The former is a translation, with occasional abridgement, of the whole Russian official reports, forty-two in number, on the cholera as it prevailed in the province of Orenburg in 1829–30,—taken from a publication by the Russian government which appeared in the course of last year. The latter is a similar translation of various documents, official and private, illustrative of the second and more violent epidemic which appeared in Georgia in 1830, and in a short while traversed the Russian empire as far westward as Moscow. The documents from which the author has collected his materials are obviously inferior in accuracy and minuteness to those published by our Indian government on the same subject. In some respects, however, especially in the statistical data supplied, they are perhaps superior; in every point of view, they are full of interest; and in one particular they are especially worthy of attention, as, in opposition to the sentiments entertained by almost every practitioner who has witnessed the East-Indian cholera, they have led the supreme medical board of Russia to espouse unreservedly the doctrine of the contagious origin of the disease, and, whether this opinion be right or wrong, will also lead every European state to take measures against its introduction, as if it were really of a contagious nature.

For some years after the propagation of cholera to the north-western portion of British India, little authentic intelligence was received of its progress elsewhere. It appears to us unnecessary to trace the scanty data which the casual notices of travellers and others have furnished on this point. The labour would not be repaid by the results.

A fact of some interest, however, has been stated by Mr Fraser, in his Travels in Persia, relative to its existence in that kingdom. He mentions that so early as the middle of July 1822, it raged with great violence, to his personal knowledge, in Tabreez, the capital of the province of Azerbijan, about N. Lat. 38½ and E. Long. 48, and distant scarcely 150 miles from the Georgian frontier of Russia; that it likewise prevailed much in the country around; and that it soon spread over an interval of 200 miles to Reschd or Resht, a port on the southern shore of the Caspian, and the chief city of the Persian province of Ghilan. Among the numerous anomalies presented in the course of the extension of this strange pestilence, it is not perhaps the least remarkable, that it should have so soon spread with rapidity and raged with violence in these districts, and nevertheless did not appear, or at all events prevail to any extent, or advance to any material distance across the adjoining Russian frontier, till eight years afterwards. In one of the

Russian reports, indeed, the introductory report of the medical council of St Petersburg, it is said to have shown itself in previous years at Astrachan, on the north shore of the Caspian, where, as will be seen presently, it broke out with violence in 1830. But the report is extremely brief on this point; and at any rate there seems no doubt that it was not till August 1829, that the disease attracted particular attention in the Russian empire, and this too in a different quarter from the parts first threatened.

So early as August 1823 the supreme medical council, alarmed at the near approach of the cholera, published Instructions for the Local Boards, to enable the physicians in the frontier governments to recognize, check, and treat the disease. But notwithstanding this precaution, it seems to have been misunderstood for some little time after its first appearance, although it certainly broke out at once with all the characters and virulence of the Indian cholera.

The first well-ascertained case of cholera, according to the official reports, occurred on the 26th August 1829 at Orenburg, the capital of the province of the same name, situated on the Tartar frontier, 400 miles north of the Caspian, and about 1000 miles, in a direction somewhat to the east of north, from Tabreez and Reschd, where it prevailed extensively in 1822. On that day a man was brought into the military hospital, affected with yellow vomiting, diarrhœa, intolerable pain of the belly, sunken features, blueness of the lips, coldness of the extremities, cramps, imperceptible pulse, extreme exhaustion, and excessive anxiety; and notwithstanding vigorous treatment, founded on the notion that the disease was inflammation, this patient died within twelve hours. No other case occurred for a week afterwards, when a woman suddenly died in the town, of suspicious symptoms, which were believed to be of the same nature. In a week more, on the 8th September, a third person, a joiner, died of twelve hours illness. As his case is a very striking one in many respects, and completely dissipates the doubts entertained by some of the identity of the Russian disease with the eastern cholera, we may here give it in detail, as it is related by Dr Sokolov, the surgeon who attended the man.

"The disease began at two in the morning, with a dreadful purging, which returned every minute. Although the weather was cold and wet, the patient went out of doors to obey the calls of nature, barefooted and undressed, and without any precaution. About five o'clock he was without feeling, quite powerless, and affected with constant cramps. At six I found him again sensible, but with sunken pale-blue cheeks, dimness of the eyes, coldness of the feet and hands, and bedewed with clammy sweat. He was tossing about, and complaining of trembling of the hands, a sense of oppression at the pit of the stomach, and intolerable thirst. The vomiting, which, according to his own account, commenced much later than the purging, was at this time less frequent than it had been; but the alvine discharges continued to recur incessantly, and were passed involuntarily. The exhausted, powerless condition of the patient, in particular his completely imperceptible pulse, both at the wrist and over the heart, the stiffness of the limbs, the coldness of the tongue, belly, and præcordia, left me no hope of his recovery. The administration of opium with oil of peppermint and ether checked the vomiting only for a short time; anodyne clysters had no better effect on the diarrhœa; and warm frictions, spirituous drinks, and even the hot bath were resorted to without success to restore the temperature and bring back the pulse. An unsuccessful attempt was in the last place made to draw blood from a vein; and soon afterwards the man expired. Twenty minutes after his last breath, and when the corpse had been already washed and dressed, it was affected all at once with frightful movements. Convulsive motions took place in the hands and feet, like those excited by galvanism, commencing first in a few muscular fibres, especially in the neck and thighs, extending in a vermicular manner, and suddenly producing bending of the head, and agitation and elevation of the feet. These spasms continued with intervals for ten minutes, becoming in the end faint and rare. The same phenomena, though in a less remarkable degree, were observed on another occasion only, but so long as six or seven hours after the termination of the symptoms of the disease."*—P. 115.

On the 9th two other cases occurred, on the 10th two more, and after this the disease became rapidly very prevalent. It was not till the 10th of September that its true nature occurred to the physicians of Orenburg, who had previously considered it inflammation of the intestines. Its subsequent progress will appear from the numerical statements given in different reports of the Orenburg Council of health. Between the 9th and 25th of September 57 cases occurred, of which 18 were fatal. Between the 9th and 30th of the same month the number of cases was 132, and the deaths 22. Down to the 21st of October the total cases were 747. In the city and suburbs the disease had disappeared entirely on the 20th of November; and from first to last 1100 were seized, and 200 died. When it is added that the population amounts to about 11,000 inhabitants, a clear idea will be conveyed of the extent to which the epidemic prevailed.

It was not till the 23d of September that cases began to appear in other parts of the Orenburg government; and the first place in which it was known to exist was the fortress of Rasipna, 60 miles * west of Orenburg. On the 30th it broke out at Berdsk, a small station 12 miles north of Orenburg, and between the 3d and 8th of October it also appeared in various villages and forts to the west and southwest, at a distance of between 12 and 33 miles. It would be tedious to follow the particulars of its course as it continued to spread from this focus. It is sufficient to mention that from Orenburg it extended about 200 miles northward, about the same distance north-west, and about 60 westward; that the district of country thus visited measures about 240 miles by 200; and that this space was traversed between the 26th of August and the 6th of February; but that the greater part of it was visited before the middle of November. On the 23d February the disease was every where extinct. In its course it affected 3590 individuals, of whom 865, or nearly a fourth, perished. The proportion which this bears to the population is not stated; but from various reports it would appear that in towns the proportion was generally about the same as in Orenburg.

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* These muscular contractions after death were also occasionally observed in the cholera of the East Indies.

The symptoms of the Orenburg cholera are well exemplified in the case already quoted from the experience of Dr Sokolov. It is needless to dwell on this topic, with the view of proving the identity of these symptoms with those remarked by British practitioners in the cholera of the East Indies. All the Russian reports unite in showing that in the generality of cases there was the same excessive evacuation upwards and downwards of a watery turbid fluid, the same collapse of the skin, coldness of the surface, sinking of the pulse, failure of the strength, lividity of the face, spasms of the muscles, sense of pain or pressure in the region of the splanchnic plexus of nerves, extreme despondency, entireness of the mental faculties, and blackness and inspissation of the venous blood; that in Russia as in Hindostan some instances occurred of rapid death, with collapse and spasms, and without vomiting or purging; that in other instances chronic irritation of the bowels continued for a long time after the violence of the disease was broken; and that sometimes too symptoms of cerebral congestion supervened on the violent constitutional disorder which accompanied the intestinal symptoms, and quickly terminated in coma and death when not properly counteracted. The ordinary duration of the disease in fatal cases was from twelve to twenty-four hours. A few individuals were attacked twice.

The Russian reports have added nothing to our knowledge

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* In substituting English for Russian measure, we have taken the Russian werst as equal to two-thirds of a mile.

of the morbid appearances already communicated by the medical officers of the East Indies. In fact, this department of the inquiry seems to have been superficially studied by the physicians of Orenburg. Along with the usual signs of internal venous congestion, most of them agree in saying, that marks of inflammation were found in the intestinal canal. Several however state, that traces of inflammation were far from being invariably present; and on the whole, since they do not particularly describe the appearances set down as inflammatory, it is reasonable to conclude, that the supposed signs of inflammation were nothing else than the redness and blackness of the mucous coat of the intestines, which are apt to occur whenever the blood is by any cause driven inwardly in unusual proportion.

The treatment pursued in the Orenburg epidemic may be likewise dismissed in a few words. The Medical Council of St Petersburg had recommended the physicians of the districts where the cholera might appear, to hold in view the practice recommended by the results of British experience in the East: and accordingly, after the disease was fully recognized, we find the practitioners of Orenburg withdrawing blood from the arm, and then administering scruple doses of calomel, with opium or other antispasmodics, and stimulating the external surface by friction and the application of heat in every variety of form. And it is a pleasing fact, which the reports now before us fully substantiate, that wherever medical assistance was easily procured, for example in towns, the mortality of the disease was in by far the greater number of instances comparatively low; while it was commonly very great in the small villages and other places where it was for the most part impossible to procure medical advice, till the disease was too far advanced to admit of much impression from the employment of remedies.

The difference in the mortality at different places is very striking and well worthy of notice. In the forts of Rasüpna, Nischne-ozernaja, and Iletsk, situated within 60 miles west and south-west of Orenburg, of 621 sick only 33 died, or about one-tenth. In four villages situated in the circle of Orenburg, and within 60 miles of the city, of 240 sick 138 died, or above one-half. In two other villages adjoining those now mentioned, and in three others in the circle of Menzelinsk, at the northern border of the unhealthy country, 89 died of 116, being a mortality of nearly three-fourths. The total average for the whole district which suffered was about a fourth; and this appears also to have been nearly the proportional mortality in the larger towns. On the whole, the mortality seems to have been less wherever a garrison was stationed, a fact which is easily accounted for by the superior civilization in the neighbourhood, as well as the more immediate access to medical assistance, and the more rigorous enforcement of the municipal regulations which were called for by the emergency of the case. There is a singular circumstance, however, regarding the relative mortality in civil and military life in the city of Orenburg, which is distinctly pointed out by the statistical returns, but which is neither noticed nor accounted for in any of the official reports; and this is, that the mortality was much greater among the soldiery than throughout the inhabitants at large. Of the 11,000 inhabitants 6000 are considered as of the military class; and of these 299 were affected, and 79 died, or more than a fourth. While among the remaining inhabitants 801 were attacked, and only 121 died, or very little more than a seventh.

We come now to the most interesting of the topics embraced by the Reports, the mode in which the Orenburg cholera originated, and subsequently extended itself. This subject, on account of its great importance, deserves to be considered at some length.

The reader is probably well aware that by an overwhelming majority of the British medical officers, who have witnessed epidemic cholera in the East Indies, this disease is considered not to be of a contagious or infectious nature,—that is, not to be communicable from man to man. A few incidents occurred which excited suspicions in the observers that it really might after all possess this property. But scarcely a single person has advocated the doctrine of contagion with any earnestness. It is well, perhaps, that in the East Indies matters should remain in this respect as they are. For undoubtedly many facts were observed there apparently incompatible with all we hitherto know of the phenomena and progress of contagious diseases; and the facts of a contrary nature are so scanty, that in the face of the lamentable effects which the adoption of the doctrine of contagion would have on the native population, it would be rash and unwarrantable to allow them much weight in the decision of the question. The sequel, however, will show that such facts, meagre and scattered as they may seem, ought not to be lost sight of altogether.

Notwithstanding the almost unanimous and earnest recommendation of British practitioners not to consider the cholera contagious, the Russian government appears at an early period to have been alarmed by accounts received of its progress in the interior of Persia; and arriving at the conclusion, that its mode of propagation was extremely suspicious, they resolved that the intercourse with the frontier provinces should be subjected to a quarantine of fourteen days for persons, and to the usual restrictions enforced in times of plague in regard to goods. As the rumours of the devastation committed by cholera in central Asia, however, died away, it is probable that the quarantine was imperfectly enforced.

But whether enforced or not, it was found quite impossible to trace the introduction of the disease into Orenburg to importation from the East. After it broke out in Orenburg, information was received that it had been prevailing in several parts of eastern Persia, more especially in the province of Khorazan, and likewise in various districts of Bucharia, above all, in Chiva, a city in the province of Kharazm, situated on the Jihon, a stream which falls from the south into the sea of Aral, and where some of the Bucharian caravans assemble previous to crossing the great Steppes of the Kirghis-Kaisaks. Hence, among the physicians and civil governors of the Orenburg government, attempts were made to trace the introduction of the cholera to the caravans which arrive at Orenburg from central Asia about midsummer. The strictest investigation, however, which could be made entirely failed in attaching any probability to this notion. The last caravan which arrived at Orenburg reached that place on the 22d July, thirty-five days before the first case of cholera occurred there; the individuals composing it were all in a good state of health; and in crossing the Steppes, which is accomplished in from 33 to 90 days, they lost only one companion, whose disease could not be ascertained, but who died after being twenty days ill. It is clear, therefore, that the disease could not have been introduced by any of the persons belonging to the caravan. It was scarcely less certain that its introduction could not have been owing to the goods conveyed by them. For at every resting-place it is the practice of the merchants to unpack their merchandize, so that the whole individuals of the caravan must have been freely exposed to the effluvia; yet none were taken ill. Besides, the Bucharian merchants and their servants, laughing at the suspicions of the Russians, exposed themselves with perfect readiness in every possible way to the exhalations from their bales and packages. Neither could it be discovered that any person in Orenburg was attacked by the cholera, who had purchased goods of a suspected nature brought by this caravan. When to these facts it is added, that at Orsk and Troitsk, two other frontier towns, where the eastern caravans likewise arrive during summer, cholera did not appear at all, we conceive it is distinctly made out, that importation in this manner was out of the question.

With somewhat greater appearance of reason, the introduction of cholera was supposed by some of the inhabitants of Orenburg to have been accomplished through means of their immediate neighbours to the East, the Kirghis-Kaisaks, from whom the government of Orenburg is separated merely by the river Oural. On this point we shall quote the following judicious remarks of Dr Sokolov.

> "Finally," says he, "the introduction of cholera into Orenburg has been ascribed to our neighbours of the Steppes, the Kirghis. Their intercourse with Taschkent, Bucharia and Chiwa is well known; so that if the disease was introduced into any of these districts from Caubul or Khorasan, it must have been communicated to the Kirghis. Their own accounts, too, though discordant in many respects, supply clear, convincing proof that cholera has shown itself in some of their hordes on the Ilek and Emba, (the former of which streams joins the Oural from the south-west, a little below Orenburg, while the latter river runs parallel to the Oural at a distance of about eighty miles, and flows like it into the Caspian). But their constant distrust of us, and their suspicious closeness are a great obstacle to our procuring distinct evidence of the form and extent in which the disease prevailed in this wandering semibarbarous race.
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> "Besides, it is their constant custom to abandon all those to their fate who are sick or suspected to be ill, (for example, of small-pox, measles, or inflammatory fever,) and to wander to a distance from any place where such diseases have shown themselves,—which is in fact the most effectual means they could take to check their dissemination, and serves equally to lessen the number of victims, and to withdraw them from observation. Along our whole confines the Kirghis are constantly employed bartering goods with us during the summer and harvest, their principal articles of commerce being sheep, camblet, felt, and skins. But if the Chiwa and Bucharian caravans could not have introduced cholera into Orenburg, because it was actually never introduced into Orsk and Troitsk, how was it possible for the Kirghis to introduce it into Orenburg, without also introducing it into the numerous stations on the frontiers with which they maintain an equally constant intercouse?"—P. 123.

It appears then that the introduction of cholera from the eastward is rendered improbable, and at all events that the surmises on this head never received confirmation from the strictest inquiry which it was possible to institute.

Quitting this subject, however, we must now proceed to consider the more important question, how the disease, when once introduced, propagated itself from place to place. A variety of views have been taken of this question. At present the general opinion in Russia is, that the disease communicates itself from man to man; but this was far from being the general opinion of the Orenburg physicians, who personally witnessed its progress. Others have conceived that it arose from terrestrial miasma,—an idea which will be presently seen to be quite untenable. Others again have thought that a superabundance of the usual causes of common cholera, concurring with some peculiar epidemic state of the human constitution, was sufficient to account for its prevalence; and finally others, bewildered by the difficulty of explaining every incident in its history according to any of these views, have resorted to the vague, hypothetical notion of a peculiar electric state of the earth or atmosphere. In what follows we shall not pretend to discuss at length each of these opinions, especially those of a purely hypothetical nature; but it will be requisite to consider fully what grounds exist for considering the disease as originating in contagion or terrestrial miasma.

For some time after the cholera appeared in Orenburg and its vicinity, the physicians there not only did not entertain the idea that it was contagious, but likewise encountered many facts which appeared to them incompatible with this opinion. But in the subsequent progress of the epidemic, facts of a contrary nature occurred, so that before it terminated, many were staggered in their opinion, and a few became decided contagionists. We shall proceed to consider the evidence which the reports supply in favour of its contagious nature, and which, as will presently appear, amounts to presumptive, but by no means very strong proof.

An important fact which appears favourable to the notion of contagion is that the disease broke out in some places very soon after the arrival of persons ill of cholera who had recently left districts where it prevailed. Several instances of this are reported. Thus, the first place where cholera appeared after it broke out at Orenburg was in the fortress of Razüpna, 60 miles to the westward, down the course of the river Oural. Here it commenced on the 19th September, passing over several forts and villages on the highway, which, nevertheless, we shall presently find, were attacked subsequently; and it is said, that the first person attacked was a vintner's servant on the very day he arrived from Orenburg, and that the disorder seized several of the garrison four days afterwards.—Again, in the fortress of Iletsk, 42 miles to the S. W. of Orenburg, and on the verge of the Kirghis-Kaisak Steppes, the disease did not break out till the 2d of October, and first appeared soon after the arrival of a soldier, and a soldier's wife, who were taken ill on the way from Orenburg, and died on the day after their arrival at Iletsk. Three days after their death three individuals took ill in the garrison, one of whom was the husband of the woman.—Another incident of the same nature occurred towards the close of the epidemic at Caramala-Gubeewa in the northern part of the Orenburg government. This village had remained healthy till the 14th of January; but about this time a peasant arrived from a village 24 miles distant, where the disease prevailed, and died of it immediately after his arrival; whereupon this man's nearest relations were attacked; and immediately afterwards the disease spread among the inhabitants, so that in a short time 41 were attacked, and 20 died. Besides these special facts, there are also some general, but rather vague, statements in the Reports, to the effect, that in no instance did a person go from a district where the cholera prevailed to another where it did not, and then take it, without the disease soon afterwards attacking many people in the neighbourhood.

A remarkable circumstance, also favourable to the opinion that the cholera was propagated by contagion, was the peculiar irregularity of its course. Diseases which are supposed to depend on peculiar states of the air, and especially cholera, as it prevailed in the East Indies, are usually believed to advance with considerable uniformity in the same directions. And this rule applies to the Orenburg epidemic considered on the great scale, its course being distinctly westward and northward. But there were several important exceptions, which undoubtedly render its progress more like that of a contagious disorder.—Thus, we have seen that in arriving at Razüpna from Orenburg, numerous forts and villages on the high road were passed over. But in no long time the disease began to retrace its steps along the road eastwards. It was at Razüpna on the 19th September. On the 6th October it broke out at Nischnei-Ozornai, 14 miles to the eastward of Razüpna; on the 8th October at Tatischtscheva, 14 miles farther east; and on the 29th October at Ritschkova, 14 miles farther east still. Then it appeared to return in its original direction to Zubotschistka, a little to the westward of Tatischtscheva, where it broke out on the 9th November. And again it resumed its backward course towards Orenburg, and on the 19th January broke out for the first time at Tschernoretschinsk, a fort situated 14 miles west from that city.—In like manner, proceeding northward, it arrived in the village of Bikkulov, 60 miles from Orenburg on the 28th September, having affected no other place on the road. Then on the 5th October it appeared at Seitovskoi, only 16 miles north of Orenburg, and on the 14th October at the town of Sackmarsk, 16 miles farther north, and consequently 28 miles south of the first village attacked. On the same day it also appeared at Sarmanaeva, 24 miles north of Bikkulov; and proceeding in a northern, or rather north-westerly direction, it arrived at Bugulma, a considerable town, 160 miles from Orenburg, on the 7th November. In the latter part of its progress, however, it passed over nearly 70 miles of the road, leaving many villages entirely free. But then it appeared again to retrace its steps, breaking out with violence at Tiriss-Usmanova, 30 miles from Bugulma, on the road back to Orenburg, so late as the 5th December, and subsequently attacking several other villages in the vicinity of this place.

Another fact favourable to the views of the contagionists is, that in some places the disease never appeared, although it raged all round, apparently because the inhabitants cut off all intercourse with the surrounding country, except under the restrictions of a rigorous quarantine. Few examples, however, to this effect are stated by the reporters. Indeed the only one worthy of mention is a single instance which occurred when the disease broke out, as already mentioned, at Caramala-Gubeewa. Some Russian peasants living together, scarcely a hundred yards from the village, shut up their hamlet on the first intelligence of the disease having appeared in their vicinity, and enforcing a strict quarantine during the prevalence of the epidemic, entirely escaped its visitation.

But the arguments now stated, when fully investigated and compared with other contradictory incidents, will be found less conclusive than they appear to be on first examination.

As to the communication of the disease from Orenburg to Iletsk and Razüpna, and to Caramala from an adjoining village, by means of individuals travelling from a diseased to the healthy district,—it is singular that, throughout the reports generally, satisfactory information is seldom given on the question, whether the residenters first attacked in the previously healthy places were exposed to the alleged contagion. There is indeed one strong fact of the kind explicitly stated, in regard to the extension of the disease at Iletsk, by the staff-physician, Dr Schimanski. He says he was able to trace the progress of the disease in the first eight cases thus:—The husband of the woman from Orenburg took ill three days after her; and about the same time also, two girls who lived in the immediate neighbourhood of the soldier, and who visited him soon after his arrival from Orenburg: The aunt of these girls, who nursed them, was next attacked; and from her it passed to her own two sons. This, however, is the only fact of the kind which is related with any precision. As to the extension of the disease at Caramala, as we have already stated, it is merely observed in general terms, that the first persons seized in the village were the relations of the man who was supposed to have brought it from an infected district. And with respect to the interesting occurrence at Rasüpna, where several of the garrison took ill four days after the death of a man who was seized immediately on his arrival from Orenburg, it is distinctly mentioned in one of the reports by Dr Schumov, that, of the individuals who visited this person, not one was attacked; that of those who were attacked not one had been exposed to the contagion supposed to have been introduced by him; and that its extension in the garrison was not prevented by an early and rigorous quarantine.

Next, as to the irregularity of the course pursued by the disease,—while this is at variance with the idea of an atmospheric cause, it is equally true that some facts relative to its course are not easily reconcileable with the notion of contagion being its only cause. We have seen, for example, that at Tschernoretschinsk, the disease appeared on the 19th of January, after having passed over this place four months before in its course westward. But it is also particularly worthy of notice, that in all the towns and villages within a moderate distance, but one, the disease had completely disappeared before the end of November, and that in the only village where it continued longer, Cardailovka, at a distance of 20 miles, it had ceased on the 8th December, or more than five weeks previously. Now all the facts hitherto collected in favour of the contagious nature of cholera show, that, if contagious at all, the period during which the contagion remains latent in the body is very short. So strongly indeed was this shown to be the case, that the Russian government, as already mentioned, limited the quarantine to fourteen days for the person. In all the cases where the disease broke out soon after the sickening of a person newly arrived from a diseased district, it appeared among the residenters in less than a week. If the contagion, which, in the majority of instances remained latent in the body four or five days only, could in some instances have remained latent for five or six weeks, the disorder, as the quarantine for persons was limited to fourteen days, ought to have extended itself over a much greater extent of country, and travelled with far greater rapidity. It is not easy then to conceive how the village of Tschernoretschinsk could have received the disease by communication from infected individuals; neither is it stated that any such communication was actually traced; and as to communication by infected goods, it does not appear that the commencement of the disease in any part of the Orenburg government was supposed to have been referable to such a cause.

The last argument in favour of contagion,—the immunity enjoyed by certain small districts in the heart of an infected country, whenever intercourse was cut off with the places where the disease prevailed,—is certainly a fact of much interest and some weight. At the same time so many instances of similar immunity occurred where the fact of free exposure to the supposed contagion could not be called in question; and so many instances also occurred where the disease spread in defiance of the quarantine, that one is tempted to ascribe the escape of the shut up districts, which, after all, were very few in number, to accident, or at least to some other cause than the suspension of human intercourse.

Several examples occur throughout the reports of entire bodies of people remaining exempt from the disease, although exposed to it in circumstances in which escape would seem next to impossible, if it really propagated itself by contact or exhalations from the sick. We shall be content, however, with relating a single instance only, which is the strongest of the kind we have remarked in the reports. It is mentioned by a staff-physician, Dr Smirnov. During two months while the disease prevailed at Orenburg, and 299 patients were admitted with cholera into the military hospital, the personal attendants on the sick remained entirely exempt from the disease They consisted of one hospital assistant, six pupils, as many Baschkir lads, and fourteen hospital servants, in all 27; and their duties were to perform blood-lettings, apply leeches, poultices, and frictions, and administer baths and the like, so that they were compelled to be constantly breathing the exhalations from the bodies and clothes of the sick, as well as to touch and handle them. Besides, the same immunity was enjoyed by certain officers and subalterns who lived in this hospital, and were in the sick-wards once a-day, besides being at other times in constant communication with the hospital-assistant and the pupils. Farther, the washerwomen of the hospital likewise escaped,—a class of individuals, who, it is well known, are extremely apt to suffer from contagious diseases. One only was attacked with cholera; but she washed merely the clothes of the officers, none of whom had been affected before she took ill. Lastly, Dr Smirnov, and his colleague Dr Sokolov, were in constant attendance on the patients affected with cholera, but did not suffer. This immunity enjoyed by the medical and personal attendants of the sick in the hospital of Orenburg is exactly conformable with what had been previously observed in the greater number of the hospitals in the East Indies.

It is, we conceive, in vain to object to the preceding fact as evidence against propagation by contagion,—that the contagion of cholera, like other contagions, does not affect every individual exposed to it,—that some other concurring circumstance is requisite to enable it to take effect. This objection is a sufficient explanation in the case of certain persons escaping in a family or congregation of individuals, some of whom suffer. But can it be held valid where a large body of persons, of all ranks in life, and all freely exposed to the alleged contagion for two entire months, escape to a man? Certainly not. The immunity enjoyed by the officers and servants of the military hospital of Orenburg is surely sufficient to prove, that *at this period of the epidemic* the disease could not propagate itself from the sick to the healthy.

It is obvious, then, that there are insuperable difficulties in the way of the opinion, that the Orenburg cholera of 1829 at its commencement was a contagious disease, or at least, that it propagated itself after the manner of known contagious diseases,—for this is perhaps all that strict induction entitles us to conclude from the facts. And accordingly, few of the medical reporters of the Orenburg government have espoused the doctrine of contagion; and those who have adopted it, did so with hesitation, and not till towards the close of the epidemic, when they were surprised to find, that it was not more obedient to the laws which govern the progress of disorders of a miasmatic origin, than it had previously shown itself to the generally received laws of contagious diseases.

This leads us in the next place to inquire, to what other cause besides contagion the propagation of the Orenburg cholera can be ascribed; and, in particular, whether it can be reasonably ascribed to Terrestrial Miasma. But it will be no difficult matter, we apprehend, to prove, that, if the circumstances which accompanied its dissemination are at variance with the received laws of contagion, there were also incidents of frequent occurrence throughout its progress, which are still more incompatible with its cause being of the nature of terrestrial miasma.

Orenburg, the city where it first made its appearance, seems, from the description of Dr Sokolov, to be one of those chosen spots on the globe, which the physician would select for its exemption from all the circumstances of locality that are apt to engender endemic diseases. It is situated in an extensive plain, abounding in undulations to diversify its surface, destitute of lakes and marshes, traversed by clear streams, and not more wooded than is required to beautify the landscape. It is built on the higher bank of a fine river, the Oural, which runs in a defined channel, and presents no bogs or miry meadows at its margin. It is liberally and cheaply supplied with all the necessaries of life, in particular with grain, fruits, and butcher meat of all kinds, and the river abounds in fish.

" On account of its position," says one of the reporters, " its regularity and cleanliness, it presents not the slightest facility for the engendering of disease. One could not wish for a more choice site for the maintenance of human health. This is abundantly shown by the small number of endemic diseases to which it is exposed, and their rare appearance, as well as by the great age attained by many of the inhabitants."—P. 99.

The whole territory comprehended in the government of Orenburg is more or less of the same nature; and in particular, the locality of the greater towns appears uniformly well chosen. How any baneful terrestrial emanations could be engendered in such a district it is impossible to imagine.

Another fact still more incompatible with a terrestrial origin is the important circumstance observed for the first time in the Orenburg epidemic,—that its progress was not arrested by the cold of winter. In the East Indies the observation had been already made, that the appearance and propagation of cholera were by no means invariably connected with any particular season or kind of weather. In Russia it has been further proved to prevail in defiance of intense frost. In most parts of the Orenburg government it continued to prevail long after the frosts set in; in many districts it went on with unabated violence when the temperature was far under zero of Fahrenheit's scale; and in some districts it actually made its first appearance when the thermometer was as low as —29° F. Thus in Tiriss-Usmanova, a Mahomedan village above 130 miles north-west from Orenburg, containing about 700 inhabitants, the disease broke out for the first time on the 5th December, when the thermometer was at —29° F.; under the same degree of cold it prevailed till the 23d of the same month; and in this short interval it seized no fewer than 147 individuals, or above a fifth of the population, of whom 37 died, or nearly one-fourth. In like manner in Sterlitamaka, a town of 2300 inhabitants, about 100 miles north of Orenburg, the disease broke out on the 7th November, and in twenty-two days attacked 79 of the inhabitants, and carried off a fourth part of these, although the temperature all the time ranged from —13° to —35° F. It is well known that terrestrial miasmata, so far as we have hitherto been acquainted with their properties, cannot exist under such conditions.

Another particular which is worthy of notice, as being on the whole at variance with the usual properties of terrestrial miasmata, though certainly by no means so important as the facts already mentioned, is, that elevation above the plain where the cholera prevailed did not constitute any protection. In the East Indies it was, we believe, invariably observed that cholera did not proceed up the mountains. In the government of Orenburg, on the other hand, instances occurred of villages being attacked, though situated at a height of 1400 feet above the surrounding plain. The villages of Jemanguleva and Sarmanaeva, north-west from Orenburg, and situated at this elevation, were attacked, the latter on the 14th October, the former on the 1st November; and in Jemanguleva 78 persons were seized in the course of 23 days, of whom 55 died; while in Sarmaneva the number attacked in four weeks was 118, and the deaths 19.

In the face of all these facts, it appears very difficult to trace the origin or progress of the Orenburg cholera to terrestrial emanations. And at all events it is quite impossible even to form a conjecture as to what these emanations may be, where they are produced, or in what circumstances.

Some of the Russian physicians appear inclined to attribute the disease to the ordinary causes of common cholera prevailing to an extraordinary degree, and favoured by some peculiar epidemic state of the human constitution. In the autumn of 1829, it is observed that there was an unusual abundance of fruits, more especially of gourds and water-melons, which are considered, and probably with justice, to be very apt to induce ordinary cholera, and which in the present instance were regarded with so suspicious an eye, that the local magistracy of Orenburg prohibited the sale of them, or the introduction of them from the adjacent country. So far an immediate exciting cause was perhaps present. The Russian reports also supply some grounds for entertaining the notion that a peculiar epidemic state of the constitution existed throughout the population at large as a predisposing cause. Something of this kind has been supposed by East India practitioners to be at the bottom of the mysterious appearance and progress of epidemic cholera in that country. But all the facts yet collected on the subject in the East constitute no more than a basis from which to proceed with farther inquiries; and they have not received any material additions from the experience of the Russian physicians during the epidemic of Orenburg. The following observations, however, by Dr Onufriev, physician for the circle of Orenburg, are deserving of notice, as containing the only evidence worth mentioning relative to the point now under consideration.

"During the prevalence of the epidemic, there was scarcely a single inhabitant of the city of Orenburg who had not some symptoms of disordered digestion. One complained of oppression and pain in the breast; another of headach, slight sickness, looseness of the bowels, and the like. These trifling symptoms of disease were usually ascribed to errors in diet. But to me it appears that their cause was a general invasion of the system by cholera, which, however, was prevented from developing itself in its perfect characters, by a regular manner of living, and other circumstances of the kind. This may be considered as proved by the almost universal prevalence of symptoms of disturbed digestion, their originating without any apparent cause, especially in persons newly arrived at Orenburg, and their departing under the usual treatment."—P. 96.

It would be an object of extreme importance to establish, on satisfactory evidence, the existence of such a constitutional *diathesis*; but it appears hasty to assume its existence on such general and vague evidence as is here presented.

On the whole, the result of this sketch of the contents of the Russian documents is, it must be confessed, to leave the medical world still very much in the dark as to the origin and mode of propagation of the Orenburg cholera. The operation of terrestrial miasmata could no where be traced; the weather before and during its prevalence presented no peculiarity which distinguished the autumn of 1829 from the same season of previous years; the superabundance of the ordinary causes of common cholera is obviously far too feeble an agent for the production of so formidable a disease as epidemic cholera, without the pre-existence of some morbid peculiarity of constitution, which was too indistinctly traced throughout the Orenburg population; and if the doctrine of contagion be adopted, in default of a more plausible explanation, this can only be done under the admission that the disease might also originate differently,—or at all events, that numerous anomalies occurred, which are at variance with the laws of contagion, as laid down from careful observations, in various countries, and in various epidemics of diseases universally acknowledged to be of a contagious nature.

In this state of matters the mind is naturally led to incline to that opinion which appears to be the safest in its practical bearings; and, accordingly, one or two of the Orenburg physicians even at the commencement, and a greater number of them towards the close of the cholera of 1829–30, either espoused the doctrine of contagion unreservedly, or admitted it to be so probable that they were induced to concur in the propriety of inforcing a rigorous quarantine. This opinion, and the resulting practice, gradually became so firmly established, that when the disease again appeared in Russia, in the autumn of 1830, it was almost every where regarded as contagious, and quarantine enforced as in the instance of the plague.

At the end of February 1830, the cholera, as we have already mentioned, became extinct in the Russian dominions. But about the same season in which it originated the year before, it again broke out with increased violence in a different quarter of the empire; and it has continued ever since to spread, with little intermission, westwards, till the beginning of May, when information was received of its arrival in the neighbourhood of Warsaw, having thus travelled about 1600 miles in the course of eight months. The documents and abstracts published by Professor Lichtenstädt bring down the account of the epidemic nearly to its cessation in Moscow. But the facts he has collected are much more general in their nature, and many of the documents less authentic, than in the instance of the Orenburg epidemic. Partly on these accounts, but chiefly because he promises to produce ere long a more detailed history of the second epidemic, we shall for the present pass over the second part of his work cursorily.

The epidemic of 1830 first appeared on the Persian frontier of Georgia, towards the end of July. From inquiries subsequently made by the Minister of the Interior, who was despatched in person to the diseased district, to superintend the labours of a Commission of Health, it was ascertained that the disease had appeared in June in the Persian province of Ghilan, on the southern shore of the Caspian, and more especially in various towns, among which, Reschd, the port formerly spoken of, is particularly mentioned. From this it extended itself northward, along the western Caspian shore, till it reached Baku, another port, 200 miles from Reschd, early in July. On its way thither it likewise struck off in a north-westerly direction along the river Kur, and thus, on the 27th July, arrived at Tiflis, the capital of Georgia, distant 400 miles from Reschd. Here it attacked 579 persons in ten days, and of these 237 died. In this city it was not considered contagious. The particulars which led to that opinion are not stated; but "most convincing evidence," says the report, "was received of its not being contagious, so that the population were allowed and recommended to quit the town and scatter themselves among the adjacent hills,—a permission of which, in a few days, two-thirds of the people availed themselves."

Meanwhile, proceeding northwards from Baku along the Caspian, the disease attacked various ports and adjacent towns, and on the 19th July reached Astrachan, the capital of the kingdom of the same name, situated on an island in the principal mouth of the Wolga, about thirty miles from the northern shore of the Caspian and 350 miles from Baku. Here in ten days 1229 persons were seized, and 433, or fully a third, perished. Its subsequent devastations in this city are not reported; and the report stops at a time when 100 persons were attacked daily. From Astrachan it spread in a north-westerly direction along the Wolga to Enotaevsk, Tschernojar, and Zaritzin, the last of which places, above 250 miles from the mouth of the river, it reached on the 4th of August. At Saratov, a considerable town on the Wolga, 200 miles farther north, it appeared on the 6th of August, and raged with great violence; for down to the 7th September, 2867 deaths are recorded. In its course north from Tsaritzin to Saratov, it also struck off at right angles to the Wolga, and attacking the country of the Don Kossacks had, at the 17th September, affected 1792, and killed 1334 of these, or two-thirds; then continuing its branch-course westwards, it passed through the government of Woronesch, then reached Kharcov 250 miles from the Wolga, and subsequently the government of Kiev, 150 miles farther west. But the main stream of the epidemic continuing to follow upwards the channel of the Wolga from Saratov, turned north-eastward with the river, and arrived at Samara, in the government of Simbirsk, and 200 miles north-east from Saratov, on the 27th August. Here in seven days 47 people died of the disease. At the same time, it passed about 140 miles in a northerly direction from Saratov, across the country to Penza, capital of the government of that name, where it arrived on the 17th August, and in fourteen days attacked 1200 of the population, of whom 800 died. Penza is situated near the source of a tributary of the Wolga running *northwards*, consequently in an opposite direction to the main stream of the river, and falling into it at Nischnei-Novgorod, where the main stream has a winding course from west to east, so as to make a great bend before taking its southerly direction. At Nischnei-Novgorod, the cholera commenced about the end of August; down to the 20th September, 800 persons had been seized; and on the 19th October it had affected 1863, of whom 968 died, or fully a half. Being now in the heart of the European dominions of Russia, it seems no longer to have observed its uniformity of direction. On the 9th September it broke out at Kasan, capital of the government of the same name, 200 miles *down* the Wolga, and east from Nischnei-Novgorod; and here, up to the 17th October, 1967 had been attacked, and 1174 carried off.* At the same time it spread in a north-west direction from Nischnei-Novgorod to Kostroma, 150 miles *up* the river; and in various parts of the government of Kostroma had, down to the 25th October, affected 430 persons, of whom 125 died. From this place it spread north, north-west, and west, into the governments of Vologda, Novgorod, and Tver; where, however, at the date of the publication of the reports on the 14th November, it had either ceased, or never prevailed but to a limited extent. In a third direction from Nischnei-Novgorod, namely a little to the south of west, it proceeded along a tributary of the Wolga, and then striking off from it arrived at Moscow, about 260 miles from Nischnei-Novgorod, towards the middle of September. Between this period and the 10th of November, 5451 persons had been attacked in Moscow, and 2876, or three-fifths, died.

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* While we say the disease travelled eastward from Novgorod to Kasan, it is right to add, that it may also be considered as having arrived at the latter place by taking a north-westerly route from Samara.

Such are the leading features in the progress of the Russian cholera of 1830. The general result is, that the disease advanced in a direction a little west of north from the south of the Caspian to Tver and Vologda, not far from the sources of the Wolga, being a distance of at least 1500 miles, in three months and a-half. In this long course it appears to have chiefly followed the great lines of communication from country to country, attacking successively the great towns on the highways, or on the banks of navigable streams. Whether or not it diverged from the highways and towns, and assailed the villages or country districts at large, is not stated in the reports now before us. Neither is it mentioned whether it attacked successively every place in its route northward, or, as in India, passed over whole districts in its way from town to town, or, as in Orenburg, first passed them over, and then returned upon them. These are very interesting points to determine in reference to the question of its mode of propagation; and it is therefore to be hoped that the promised official reports will enable us to settle them.

There are also many other statistical considerations which we hope will not be omitted, more especially as for some years the attention which has been bestowed by the Russian Government on the statistics of the empire must have given it great facilities in conducting such inquiries. The reports and abstracts translated by Professor Lichtenstädt, for example, do not convey any information on the proportion of cases to the population of each place, the relative mortality of different periods of the epidemic, in different ranks of life, in different circumstances of locality and access to medical advice, the relation of the mortality to that of ordinary years from diseases generally, and many other similar points of much interest in a scientific and practical point of view. The following facts of the kind now alluded to we have gleaned throughout the documents presented by the author. The mortality, which was every where considerably greater than in the Orenburg epidemic, differed much in different towns, being in Astrachan one-third of the cases, in the government of Kostroma rather less, in Nischnei-Novgorod one-half, in Kasan and Moscow three-fifths, in Pensa and in the country of the Don Cossacks two-thirds,—and in the whole of these places taken collectively, the number affected was 14,000, and the deaths 7700; so that the total average mortality throughout the invaded districts may be safely assumed to have been one-half. The mortality in Moscow varied greatly at different periods of the epidemic, being at first so high as nine-tenths of the cases, and afterwards sinking gradually to seven-eighths, five-sixths, three-fourths, a-half, and at last to a-third. The decrease was probably owing in part to a change in the virulence of the epidemic; but much must also be ascribed to the zeal of the government in providing the means of subjecting the patients in the poorer ranks to medical treatment at an early period of the disease.—In illustration of the importance of early medical treatment, an interesting fact is stated in one of the reports from the government of Saratov, where the disease was in general virulent. On the estate of Count Gurjev, in that government, 166 persons were attacked, and 19 died without any treatment; but of the remaining 147, who were subjected to treatment at an early stage, 26 only were cut off, that is, little more than a sixth part.

We have said, that from the very commencement of the epidemic of 1830, it was almost universally regarded as a contagious disease. A very remarkable exception, indeed, occurred at Tiflis. Here, as already stated, the physicians were so satisfied of its non-contagious nature, that the inhabitants were encouraged to disperse themselves in the surrounding country. It is greatly to be regretted that the reasons for this bold measure, and still more its results, have not been touched on in the reports, for it might almost be regarded as an *experimentum crucis* upon the question of contagion. Every where else, however, the doctrine of contagion was unreservedly adopted, and means founded on this conviction were taken to check the progress of the disease.

Although the Reports supply few precise facts in support of its contagious nature, the brevity with which most of them are given will probably account for this deficiency, as it is impossible to conceive that the doctrine would have been so generally adopted without the daily occurrence of incidents considered favourable to this view of the question. The only facts of sufficient consequence to require special notice from us are contained in a full and interesting narrative of the appearance and dissemination of the epidemic in and around Astrachan by Dr Solomov, staff-physician of that place. As his observations possess much interest, and relate to the first breaking out of the disease in the Russian dominions, we shall make no scruple in presenting them nearly in his own words—some passages only being omitted which appear to us immaterial.

"Cholera first appeared on the frontiers of the Astrachan Government on the 3d July, on board a ship of war, which had arrived from

Baku, (350 miles down the Caspian,) and lay sixty miles from Astrachan. Till the 20th of the month the disease was confined within the Sedlitovski Lazaretto, whither the vessel with the sick had been brought. But on that day four people were taken ill in the city, near the river Kutum; and from this point the disease imperceptibly spread over the whole town, carrying off a great number of people. After the 27th it attacked the suburbs, then the nearest villages, and then gradually extended over the whole Government. * * * In reaching Astrachan from Baku it passed over all the intermediate districts of the Russian territories. * * * The first places attacked after Astrachan were several Tartar villages in the immediate vicinity, at a distance of from two to four miles, the inhabitants of which were in constant communication with the town, and to which also many families fled out of it as the disease spread. On the 27th July it also appeared in the village of Tscherepacha, eight miles from Astrachan, on the return of some inhabitants, who had been to the town in search of work, and one of whom was the first person taken ill. After the 29th it proceeded through the Kossack stations and the town of Enotaevsk, on the highway to Moscow, up the stream of the Wolga, its extension in this direction evidently accompanying the fugitives from the places successively attacked. In the town of Enotaevsk it spread with the arrival of a sick boor. On the 29th July a barge arrived at Tchernojar, 150 miles up the Wolga, with several rowers on board, who were ill of cholera. On the 8th of August the disease began to prevail among the inhabitants, and then passed across the river among the neighbouring Kirghis, as well as upwards to the villages of Solodnikovsko and Vaisovka, in one of which the first person attacked was a military prisoner, who had been exposed to the disease. On the 25th July the epidemic also began in Krasnojar, situated on the northern mouth of the Wolga, twenty miles from Astrachan; and it first seized a private of invalids and a girl of thirteen years of age, who had both recently come from that capital. On the 3d of August it appeared in the estate of M. Nekrasov, ten miles from Krasnojar, and among the Algarin hills in the vicinity of the town; from which it finally extended down to the Cossack cordon on the Caspian, between which and Krasnojar there is constant communication. While the disease prevailed in Astrachan some fishermen were there from Makovsky and Schitinsky, two places on the shore of the Caspian, where the Wolga opens into it. These men, terrified at the progress of the epidemic, hastened home, to place themselves, as they imagined, in security. But they had already imbibed the poison; some fell sick on the way, others after arriving at their homes; and the disease soon spread throughout the community to which they belonged.

" On the 2d of August the salt-dépôt of Basinsk in the Caucasan kingdom, ten miles off the highway, was subjected to the general pestilence. On the 1st of the month an Armenian, convalescent from cholera, arrived at the house of a private of the dépôt guard, who was taken ill and died next day; and other cases occurred afterward. At the salt-dépôt likewise of Kigataka, twenty miles from Krasnojar, a private soldier was taken ill whom I had sent thither from Astrachan, with medicines and instructions for the inhabitants, in case the disease should appear among them; and various individuals were attacked subsequently.

"Many gardens and farms in the neighbourhood of Astrachan remained exempt from the epidemic, having broken off all intercourse with the diseased districts. In many villages, too, where similar measures of security were taken, the issue was equally fortunate, although the cholera raged all around them,—for example, in the lordships of Smirnov, Beketov, and Prince Dolgoruki, in Sarepta, eight miles from Zaritsin, and some other places. On the other hand, the Kalmucks, who, as soon as the disease appeared among them, left their sick comrades behind them and repaired to pasturage-grounds fourteen miles off and more, did not in this way get rid of their fatal visitor: fresh cases occurred among the families who were first attacked."

After these interesting particulars he goes on to state, that in Astrachan many instances occurred where the greater part of the members of a family were taken ill in succession, and that local causes appear to him inadequate to account for the disease prevailing epidemically, for the two seasons previous to 1830 were much more favourable than it to the extension of a disease of local origin, as the country was much flooded. He has unfortunately omitted to tell us in what manner the cholera was supposed to have passed into the city of Astrachan from the Sedlitovski Lazaretto; but he observes that suspicions were entertained of cases having occurred before the 20th of July, although they were not reported to the police.

Here we must leave the Russian Reports for the present. We wish that before doing so we could say they have enabled us to make up our minds on the great question for the elucidation of which they have been chiefly intended. But we cannot help declaring, that, in our opinion, while they certainly contain presumptive evidence of the Asiatic cholera being a contagious disease, they do not establish this point with the clearness which, in questions of the kind, the wariness and accuracy of medical science would desire in the present day.

The general tendency of the whole inquiry, as developed by the documents published by Professor Lichtenstädt, obviously leans toward the doctrine which some physicians in this country have within a few years been inclined to adopt in regard to all contagious diseases,—that the Asiatic cholera originates in a local cause, and for some time in this alone; but that it gradually acquires the power of communicating itself from man to man. Such is the doctrine espoused by Lichtenstädt himself. This is an easy mode of getting over the difficulties which have been encountered in attempting to solve the question of the contagiousness of various diseases; and, in the instance of cholera, it is peculiarly convenient, because there is no other disease, the phenomena of whose propagation are so perplexing to one who holds the doctrine of its origin in a single cause only. We conceive some of the facts mentioned in the preceding sketch are quite inexplicable, if it be assumed that the disease originates in terrestrial, atmospheric, or other local causes alone; that, on the contrary, other facts are equally incomprehensible, if the doctrine be upheld that it spreads only by communication from one person to another; and, consequently, that it appears almost indispensable to allow the existence of both modes of propagation.

But, before adopting the view here taken, the question naturally arises, whether the facts now alluded to were carefully ascertained, and the collateral circumstances fully inquired into. In particular, it may be asked, whether implicit reliance can be placed in the numerous instances recorded, to the effect that cholera never appeared except where some one took the disease, after having recently been in a diseased district. We know that the supposed incidents of this nature, which have occurred to some medical officers in the East Indies, are fallacious; because instances have happened where, owing to the apathy or ignorance of the natives, the disease, though present in some districts, was not known to exist till it was discovered on the arrival of a European physician. And it is not saying too much to maintain that the southern and eastern states of the Russian empire are not yet so much elevated in their medico-political institutions, or in civilization generally, that similar sources of fallacy might not have been occasionally encountered there also, if diligently sought for.

We have had opportunities of mentioning, on various late occasions, our ideas on the accuracy of the tests by which it is usually supposed that a disease may be proved to be contagious or not; and have stated what, in our opinion, constitutes a better set of criterions than those commonly resorted to. We have not space to repeat here what has been previously stated. But we may mention that the kind of evidence, on which we conceive the greatest reliance may be placed, is nowhere to be found in the reports of the Russian cholera.

Taking, however, the Reports as they stand,—admitting the authenticity and precision of the facts,—it will not be easy to deny that a strong presumption is supplied of the disease having been contagious, whatever may be the fact as to its also originating in a different cause. Assuming, therefore, that it is contagious, which, it may well be imagined, the European states most liable to a visit from it, will do unreservedly, it is requisite to add farther, that the Russian system of quarantine was not properly calculated to check and extirpate the disease. The duration of the Russian quarantine for the person is fourteen days. Now, the official documents supply the strongest presumption, that, if contagion is its only cause, the contagion may lurk in the body without breaking out for a much longer period. The latent period seems in general to have varied from two or three days to a week; but there are also facts which establish a probability that it may at times extend beyond thirty-five days. This is an important consideration, to be kept in view by those governments which may feel called on to adopt means for preventing the introduction of the pestilence, and to profit by Russian experience in their choice of measures.

Since the preceding sketch was finished, the British government has taken the alarm, and an Order in Council has been issued, subjecting certain articles from Russian and Prussian sea-ports to fourteen days' quarantine and purification. If the disease should approach any nearer the sea-ports on the Baltic, it will also be requisite to enforce quarantine for persons from suspected places; and indeed the Swedish government has already directed this measure to be resorted to, whenever vessels do not produce certificates of the town from which they sailed having been at the time free of cholera. When quarantine for the person shall be enforced, we may observe that it ought to be sharply looked after in this part of the kingdom particularly, as the voyage from the Baltic to the Firth of Forth is usually accomplished in a very few days.

The British government has, without doubt, acted wisely in considering epidemic cholera a contagious disease, so long as the only object is to prevent it from gaining access to our coasts. A little commercial inconvenience is a small price to pay for the chance of immunity. But it is to be hoped that the originators of the late order in council will not forget, that the question of contagion must not be solved in so summary a manner, if unhappily the disease should once gain a footing among us. The question would then be no longer a mere object of hypothetical speculation, which in practice might be solved in the meantime, by holding what is called the safe side to be the true one. Before it is accurately determined whether or not cholera can propagate itself from one person to another, no man can say which opinion it is safest to hold. For in the one case the epidemic is to be checked by hemming in the population of the district where it appears; in the other by inducing them on the contrary to disperse over the country. The question, therefore, is not a mere subject of idle medical controversy, but is pregnant with the gravest practical conclusions.

Since we have been led to touch on the possibility of the cholera visiting the British Isles, it may be well to add, that our government should consider, that there is no other country in civilized Europe which has so great reason to dread the consequences of a visit from this terrible scourge. The density of our population,—the extraordinary quickness and extent of intercourse between our great towns,—the great difficulty which would be encountered in imposing restrictions on the liberty of the subject,—and the want of an adequate military force, if that difficulty were overcome,—would all combine, we apprehend, to render its diffusion swift and extensive to a degree unparalleled in its previous history.

ART. II.—*The Dublin Hospital Reports, and Communications in Medicine and Surgery.* Volume the Fifth. Dublin, 1830. (Continued from Vol. xxxv. p. 162.)

AMONG the therapeutical articles in the present volume, the letter of Dr Cheyne on *the use of frequent small blood-lettings in hemoptysis and incipient consumption*, and the paper of Dr Marsh on a spasmodic affection of the *glottis* in infants, merit particular attention.

The employment of frequent small bleedings as a means of arresting the progress of incipient consumption, or of removing symptoms which are believed to denote this insidious disease, was originally practised and strongly recommended by Sir John Pringle, who states that in old and stubborn coughs, or in the first stage of consumption, when the patient complains of pains in the side, constriction at the breast, or of hot and restless nights, he trusted most to "small but repeated bleedings, to setons, and to a low cooling diet." These small bleedings Sir John Pringle found beneficial not only in old coughs threatening consumption, but also after hectic symptoms have appeared. "The quantity of blood drawn," he continues, "was from four to seven ounces once in eight or ten days, and sometimes a vein was opened after shorter intervals. It was observable that the patients never found themselves so much relieved in the first as on the second or third night after bleeding. The blood was constantly sizy; but if it had been found in a resolved state, to have insisted on taking away more would have been improper. Nor would I recommend this method for common practice, without making great allowance for the strength of soldiers, nor without suiting the quantity of blood to be let to the condition of weaker patients." And shortly after he adds, "I have found nothing diminish the hectic fits so much as small bleedings and a cooling diet."*

The foregoing testimony in favour of the beneficial effects of frequent small blood-lettings, however overlooked by some, has never been altogether neglected by the profession; and in all instances in which long-continued cough, with tightness in the chest, accession of difficult breathing on exertion, and some degree of loss of flesh and strength, led to the suspicion of approaching pulmonary disease, it has been the practice of most judicious physicians to direct the occasional abstraction of small quantities of blood, repeated as the symptoms appeared to demand. The actual discharge of blood by coughing or expectoration has been very generally regarded as a still more cogent reason for the use of the lancet; and whatever measures might subsequently be resorted to, this of depletion in small quantities has been invariably employed by all rational practitioners in the early stage of the complaint, while there was yet hope of controlling the disease in its origin.

That this mode of treatment, nevertheless, has not been attended even with general success cannot be denied; and it is doubtless owing to its frequent failure that it has been of late years employed with greatly less confidence than it formerly commanded; and that by some it has been altogether relinquished. Nor ought this to be matter of astonishment. Whoever knows the state of the lungs in genuine tuberculous *phthisis* must be aware, that to speak of curing consumption by any means whatever implies a physiological impossibility, and would require the exertion of a power similar to miraculous.† And though cases of tuberculous consumption have been stated on good authority to be cured, it is not by resolution, but by the elimination of the tubercular masses; and it is manifest, that, from the very nature of the cases, in a few only can the powers of the constitution be supported till this process be completed.

There are, nevertheless, two, if not three, varieties of consumptive disease; that is, of pulmonary disease with consumptive symptoms, in which there is little doubt that recoveries may be, and have been, effected under favourable circumstances. These, we took occasion to show on a former occasion, are chronic *bronchitis*, and that variety of chronic peripneumony which is attended with frequent hemorrhage from the bronchial membrane, or the lungs, or both,—the *phthisis florida* of the Germans. In both cases the phthisical symptoms either depend entirely on the chronic inflammatory disorder of the lungs, unconnected with tubercular disorganization, or are so little connected with tubercular disease as to disappear as soon as the inflammatory disorder is subdued. There is little doubt that it is to these cases chiefly that the employment of the frequent small blood-lettings, as recommended by Sir John Pringle, is more particularly applicable. To illustrate this idea more forcibly, we may adduce the observations made by Dr Cheyne in the present letter, which, without the author's consciousness, may be regarded as a commentary on the text of Sir John Pringle already quoted.

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* Observations on the Diseases of the Army. London, 1765, Part iii. Chap. iii.

† "The extensive mass of disease," says Ferriar, "generally apparent in inspecting the lungs of phthisical subjects, and the strange formation of new morbid parts discoverable in it, would require for its amelioration an effort of the power which originally created the living body."

Dr Cheyne begins by stating, that he has often seen consumption commence without any unequivocal symptom of pulmonary disease, and simply as inflammatory fever with quick pulse, hot skin, flushed countenance, white tongue, high-coloured urine, &c. and without distinct local affection. These symptoms, though at first expected to subside gradually, were either quickly or insensibly succeeded by the well-marked characters of consumption. The pulse continued quick; the breathing is observed to become weak and quick, with occasional cough; and though the appetite returned, the patient recovered neither flesh nor strength. On inquiry the patient is recognized to become very hot during the night, and perspire towards morning; and the case is at length pronounced incipient consumption. In cases of this kind Dr Cheyne states that small bleedings of six ounces, practised once every four or five days, have sometimes apparently proved sanative. He does not give any other marks except the semeiotic by which to distinguish this species of disease, and he expresses no opinion of the precise pathological nature of the lungs, on which these formidable symptoms depend. It is nevertheless clear that there must be a local affection, however obscure and imperceptible it seems to ordinary inspection; and from the absence of pain or weight in any part of the chest, it appears most probably to be seated in the bronchial membrane.

One species of hemoptysis or rather bronchial hemorrhage, attended with febrile symptoms, and running a course of from two to three weeks, and which Dr Cheyne regards as symptomatic of incipient consumption, he also distinguishes as greatly benefited by frequent small bleedings. In these cases, in which slight but not permanent recovery occasionally takes place under the antiphlogistic treatment, and in which the dry cough, conceived to denote slow tuberculation, and gradual loss of flesh, are followed after some months by hectic fever, the patient may be saved by seasonable blood-lettings, not exceeding six ounces, every sixth or seventh day, with regimen suited to the strumous diathesis.

"Hemoptysis in its more common form of pulmonary apoplexy, as it is fancifully called by the French pathologists, may sometimes be successfully treated in the same way, namely, by small bleedings repeated at stated intervals. But these are topics which would require to be more carefully handled than my time will at present permit. They would be best explained not by the hospital physician, but by him who practises extensively among the upper classes; but unhappily they who, advancing in life, obtain lucrative employment, are often obliged to forsake the favourite pursuits of their youth for occupations neither so interesting nor agreeable, and their matured experience, which often contradicts the conclusions of youthful zeal, is unproductive to all but themselves."

To confirm these therapeutical views, Dr Cheyne relates one case, of which we can only give an abridged sketch. A young gentleman, now a clergyman in the established church, was first attacked at the age of fifteen in 1807, with hemoptysis; and from that period till 1823, including a space of sixteen years, he suffered annual attacks, which, however, were so slight as not to affect his health, or interfere with his professional pursuits. In May 1823, however, when he was in the thirty-first year of his age, the hemorrhage was so considerable, and attended by symptoms so formidable, that, by medical advice, he lost twenty ounces of blood, and took for several days a nauseating mixture, with the effect of diminishing the frequency of the pulse, and giving a temporary check to the hemorrhage. The complaint soon after recurring, with great debility, he relinquished professional duty, and proceeded to Dublin. After spending five months there, with the stomach so much disordered that the food was almost immediately rejected, by the advice of his medical attendants, who recommended him to spend the winter on the continent, he left Ireland in October 1823, with a seton inserted in his arm, to be kept open on the journey, and arrived at Nice early in December, much improved in health, but expectorating every morning some blood or bloody mucus. A few days after his arrival, the hemorrhage recurred with great difficulty of breathing and inability to lie in the horizontal posture; but by removing from the north to the south of the town these symptoms disappeared. The hemoptysis was also checked; but the disorder of stomach and the expectoration of bloody mucus continued. At Rome, where he passed the months of March and April 1824, and subsequently at Geneva during the summer, he had frequent returns of the complaint, requiring large bleedings from the arm, bleeding by leeches, strict attention to diet, and alterative doses of blue pill.

At the close of the summer he proceeded homeward, and, after being detained some weeks in Liverpool by a smart hemorrhage, he arrived in Ireland in November. The complaint recurred so frequently during the winter, often at the rate of three or four times daily, so severely, and became so little amenable to the usual remedies, that he became much emaciated, and so weak, as to be unable to walk across the room without assistance. In this state he continued till February 1825, when it was suggested to try the effect of small bleedings from the arm at stated periods. In pursuance of this plan, immediately after an attack in the middle of February, six ounces of blood were drawn from the arm; and for three days he was free from any attack; but for a slight one on the fourth, six ounces were again taken. Ten days elapsed without any attack; and they became greatly less frequent; but every week six ounces of blood were taken. In the beginning of May, he went to the country with directions to repeat the blood-lettings, which he was able to do himself, every week, and at each of which the blood was invariably much cupped and buffed. Under this management the hemoptytic attacks abated in frequency and violence; the stomach began to recover its powers; the bowels acted without opening medicine, and from a state of the most desperate weakness and emaciation, he began to recover flesh, strength, and health. During the winter of 1825–26, he was able to take exercise in the open air, without suffering from cold; and in June 1826 he resumed the duties of his profession, which he has not since been obliged to interrupt. With the exception of an occasional attack in spring and autumn, which is always checked by the lancet, his health remains permanently good.

Dr Cheyne adds, that he has of late frequently prescribed venesection in the more common form of hemoptysis, that is, we presume, in hemoptysis without consumptive symptoms, with success. At this we do not wonder; and although he regrets the loss of the notes of these cases, it cannot be that they were necessary to demonstrate the efficacy of blood-letting in hemoptysis. What we regret most is, that he does not attempt to distinguish with that precision which might act as a guide to others, the kind of incipient phthisical cases in which frequent blood-lettings are really efficacious. It would be above all desirable that such cases were previous to treatment accurately examined by the stethoscope by a patient and skilful observer, and that this inspection be repeated during the course of treatment. In the case detailed by Dr Cheyne in illustration, we have no marks afforded to determine which texture was affected, or what was the nature of the affection, nor is any direct proof adduced to show that the lungs of the patient contained tubercles. If they did, what became of these bodies? Were they absorbed or resolved, or do they still remain in an inactive condition? If the latter is the inference justified by the facts, then it must follow that the symptoms were not caused by the tubercles but by the chronic inflammation. So long as pectoral diseases are treated without attention to the different tissues affected, and to the different forms of morbid action, we must remain in great uncertainty as to the true and genuine efficacy of any remedial agent.

As to the determination of the particular question, whether small and often repeated blood-lettings can arrest the progress of incipient consumption, in other words, the formation, increase and softening of tubercles, we think it would be attaching a most undue degree of importance to any single case, to allow that the present is adequate to demonstrate, or even give probability to, the inference. That a case of obstinate and repeated hemoptysis with consumptive symptoms, that is cough, expectoration, and loss of flesh and strength, was cured in this manner, is undeniable. That this was a case of consumption, however, is by no means proved by the facts. That any similar case of obstinate and repeated hemoptysis may be cured in the same manner is also undeniable; nay, that several such cases are cured is certain; for we have known instances in which, after repeated discharges of blood from the lungs, accompanied with many of the usual symptoms of consumptive wasting, recovery had been effected under the use of remedies of different kinds, and in one or two instances, of means so inert, that the recoveries ought to be regarded as spontaneous, or at least dietetic. Such results, however, would by no means warrant the conclusion, that the same benefit is to be expected from the use of frequent small bleedings in genuine tubercular consumption.

We must, nevertheless, do Dr Cheyne the justice to say, that the practice of which he appears as the advocate is calculated to be of some service, if used with judgment and due regard to the kinds of cases. He remarks, that cases of incipient *phthisis* ought to be considered as instances of scrofula affecting the lungs, in which an inflammatory state is caused by the presence in that organ of irritating substances, as tubercles are, and that these attacks of inflammation accelerate the softening process. This view is, within certain limits, practically correct; and whether we adopt the notions of some, that tubercles are the effect of inflammation, or of those who regard them as a product of inflammation operating on an unhealthy or strumous habit, or the concurrent effect of inflammatory action, it is still a truth, that in the majority of cases inflammation is present, and the first active existence of these bodies is evinced by pains or tightness in the chest, restraint in breathing, scanty urine, hot skin, and all the usual signs of febrile action. It is under these circumstances, doubtless, that the practice recommended by Dr Cheyne may alleviate the febrile symptoms, and may be pursued with this view. But it by no means follows that it will put a stop to the peculiar morbid action concerned in the formation of tubercles; and in a very large proportion of cases it is quite inefficient. The inflammatory symptoms are removed for the time; but they very soon recur, and requiring the same means of control, with less power to endure it, the disease in general proves either too firmly seated, or too rapid in progress, to be arrested or even retarded by any means whatever. One circumstance, particularly, in the use of such depletory means, is the frequent source of embarrassment to the practitioner. In many of the cases in which it appears to be indicated, it is followed by such rapid sinking of the strength that the patient never rallies thoroughly; and all remedial measures in the way of exercise, travelling, or gestation are rendered either impracticable, or attended with so much inconvenience and distress that they cannot be employed.

The convulsive disease of infants, denominated *spasm of the glottis*, by Dr Marsh, has been noticed by various authors, as Millar, Cheyne, &c. under the name of *spasmodic croup*, and has been more particularly described by Dr John Clarke (chap. iv.) One of its effects also, that of the cramped incurvation of the fingers and toes, had been fully considered long ago by the late Dr Kellie of Leith. The disease now described at large by Dr Marsh consists in the respiration being suddenly converted into a noisy wheezing or croaking in the larynx, or even to be suspended for a little, while the face becomes livid and swollen, the features fixed, and the muscles of the upper extremities are tetanically contracted. These fits, which occur chiefly during the night, but may take place in the day-time, terminate in general in a sonorous gasping inspiration, in which the infant struggles violently for breath, and at length, after a gasp or two more, begins to breath naturally, though feebly. They may be attended with a tetanic incurvation of the fingers and toes, in consequence of the flexor muscles being spasmodically contracted, while the extensors are paralysed, during which it is quite impossible to extend them even forcibly.

This disorder is always attended with more or less derangement of the alimentary canal and nervous system. The bowels are either constipated or unusually loose, and the discharges are unhealthy. The child is occasionally sick, and vomits or cries, as if the stomach ached; and is oppressed during the night, and cannot sleep. The tongue is furred, or red, glazed, and dry; the thirst is urgent, and the skin is dry and harsh. There is at the same time occasional squinting; and in some instances the symptoms either simulate those of *hydrocephalus*, or pass insensibly into them. When this does not take place, the face becomes swelled, bloated, and wax-coloured, with a dirty livid circle round the eyes; the hands and feet especially are swelled and œdematous; the belly is tense and prominent, while the arms and legs are extenuated, and the muscles become flabby and wasted.

These symptoms may originate in various modes. In some instances they take place without much manifest disorder, except that from dentition, as in the first case detailed by Dr Marsh. In others, however, they are the result of long-continued disorder of the stomach and bowels, connected with more or less plethora of the vascular system, especially of the brain and spinal chord; and this we believe to be by far the most frequent source of the disease. In one remarkable and obstinate case of this disease, it was manifestly occasioned by improper management during weaning, in which the infant was exposed to cold, and suffered from indigestible food. From the observations of the present author, it appears not improbable that the disease was occasioned, in more than one instance, by exposing the infant to the atmosphere of a newly painted house. It appears to occur independent of dentition; for in one instance recorded by the present author, the fits took place on the third day after birth, and recurred occasionally till the third month, when they disappeared spontaneously. Between the fifth and sixth months, however, they returned, accompanied with the incurvation of the fingers and toes, and swelling in the hands and feet; and at this period two incisors of the lower jaw were cutting the gum. Afterwards, during the process of dentition, the croaking inspiration frequently recurred, but always without convulsions, till the appearance of the first molar teeth.

Only two fatal cases are mentioned by Dr Marsh. In the first the morbid appearances were confined chiefly to the brain, the ventricles of which contained a large quantity of serous fluid; and this is the only instance, he adds, in which the disease terminated in hydrocephalus. In the second the *uvula* was elongated; the *rima* glottidis very much contracted; the *larynx*, upper part of the windpipe, and *œsophagus*, contained small portions of undigested oatmeal; and the lungs and right side of the heart were filled with dark-coloured blood.

As the *rima* glottidis was much contracted at the period of inspection, seventeen hours after death, and had recovered its natural dimensions on the following day, and as the other organs were natural, or at least not sufficiently changed to induce death, Dr Marsh infers that the spasmodic closure of the glottis was the immediate cause of the fatal event. The disease, therefore, he regards as in the commencement purely spasmodic, and only producing an affection of the brain by increasing in severity. He seems to think also that the state of the pneumogastric nerve may have some influence on it. This is by no means improbable; but it may be questioned whether the pneumogastric nerve is disordered independent of the nervous system generally, and it is very questionable whether the knowledge of such disorder could enable us to give our remedies a more particular direction to this member of the nervous system.

The chief reason why the spasmodic affection of the *glottis* becomes so conspicuous a feature of the disease is, we conceive, to be sought in another circumstance. That aperture is comparatively smaller in the infant than in future years; and as any irritation operates at the same period much more forcibly in inducing irregular muscular actions, every irritating cause which excites these actions most readily operates on the muscles of the larynx. In general the fits are induced by efforts at swallowing; and the circumstance of their being most common during the night is referable to the greater fulness of the vessels about the head and throat at that time, in consequence of the horizontal position being longer continued.

The treatment recommended by Dr Marsh, consists, in the simplest form of the disease, in improving the general health, and giving tone to the nervous system, and where it is complicated with more general affections, in removing these by appropriate treatment. In the former variety the vegetable or mineral tonics, pure bracing air and regulated diet, with antispasmodics, are recommended. In the latter case the previous removal of local symptoms or sources of irritation is necessary. For instance, if *hydrocephalus* threaten the infant, the head must be shaved and leeched, and the usual remedies employed. If there are symptoms of gastro-intestinal irritation, the bowels must be most thoroughly cleared by energetic purgative medicines. And when dentition is the cause the gums may be divided. In general the remedies which we have found most beneficial are frequent purgative medicine, especially calomel and castor oil, with a drop or two of croton oil. Blood taken from the nape of the neck by means of leeches is also of sovereign efficacy, especially when the head is hot and the scalp moistened with drops of perspirable fluid. The diet should consist exclusively of farinaceous matter and diluted milk or asses milk.

Among the surgical articles, Mr Porter details a case of aneurism of the left subclavian artery, and one of aneurism of the right carotid, both successfully treated by ligature. Of these cases we shall merely enumerate the most remarkable circumstances.

In the case of subclavian aneurism, the vessel was tied at the anterior margin of the *scalenus antious* by a single ligature on the 30th June 1829, and on the 16th July, or the seventeenth day, the ligature came away, while the aneurismal tumour had greatly diminished in size. The patient, indeed, seems never to have had a bad symptom, and throughout the pulse was never, except on one occasion, above 74. On the twenty-first day the wound was considered healed; the arm was free from pain, its sensibility and mobility restored, and the *œdema* of the hand and fingers was subsiding. The diminished aneurismal tumour, however, was slightly tender; and as it threatened inflammation and suppuration of the sac, the patient was removed from hospital on the 29th July. Resolution was attempted by leeches and cold applications, with the constitutional influence of purgatives and low diet. These measures, however, were unavailing; and being re-admitted on the 12th August, the tumour was opened on the 14th by a free incision, and much fetid purulent matter, with bloody clots, discharged. The tumour then contracted, and after discharging healthy purulent matter for a few days, it was healed in little more than a week, and the patient finally quitted the hospital well on the 31st August.

In the case of carotid aneurism, though the vessel was tied within three-eighths of an inch of the *innominata*, no uneasy symptoms were produced in the heart or great vessels. On the third day, however, the tumour became very hot and painful, with accession of febrile symptoms; and on the fourth it was much increased in size, dark-coloured on the surface, and œdematous, with pulsation still manifest. On the ninth day, though the pulsation had diminished, its size was enormous, its surface bluish pink, and the œdema still increasing. On the thirteenth day, when the pulsation was very obscure, it was evidently diminishing in size, and the incumbent skin was less tense. On the nineteenth day, on which the ligature came away, it had diminished so much as to be rather less than before the operation. After remaining in hospital about three weeks longer she quitted it, nearly two months after her first admission, for the country. Four weeks after she returned with the tumour much of the same size. On the night of the 11th December with rigor, nausea, headach, and other symptoms of febrile accession, the tumour began to increase rapidly, with a sense of burning heat within it, and of general uneasiness over the side of the neck and head. On the following day it had increased twofold, with the surface tense, pale red, and œdematous. A puncture made in the evening gave vent to some serous fluid, slightly tinged with blood. On the 13th and 14th it was leeched, with abatement of pain in the tumour. On the 20th it burst in the site of the puncture, and gave vent to a considerable quantity of healthy purulent matter, with the effect of reducing greatly its size. On the 21st, as it was red, swollen, œdematous, and painful, an incision an inch and a quarter long was made in it, and after all the purulent matter was carefully pressed out, it was dressed with compresses and plasters round the base, leaving the aperture uncovered. On the 23d and 24th a large coagulum escaped from the wound with some brown coloured fluid; and on the 25th, though its surface was still dark red, it was reduced to nearly one-third of its original size. She was now allowed full diet and a glass of wine daily; and the residual solid part of the tumour, which was supposed to be the principal coagulum of the sac, which was distinctly felt from the 28th December to the 30th January 1830, and which occasioned several abscesses requiring openings and counter-openings, was observed to have diminished on the 15th February, and soon after was so much reduced, that little or no trace of the original tumour remained.

These cases, of which we have given the foregoing sketches, are not altogether satisfactory. Without wishing to call in question the diagnostic powers of Mr Porter, it appears somewhat doubtful, whether they were really aneurismal tumours. The two *coagula* discharged in the second case no doubt afford evidence of their having contained blood; but in all other respects they seem to resemble suppurating tumours, or abscesses lying over their respective arteries. It is manifest that the mere circumstance of pulsation and the cessation of this on the compression of the artery, is by no means sufficient to show that a tumour in such a situation was aneurismal.

In a paper on *Onychia*, or the fungating malignant sore of the nails of the fingers and toes, Mr Francis Rynd impresses the indispensable necessity of removing altogether the seat of the morbid action, by a deep incision down to the bone, from three to four lines behind the posterior margin of the sore. For this complaint amputation, it will be remembered, has on the same principle been already practised by Mr Syme of this city. The lateral incurvation of the toe nail, or what is vulgarly named *growing into the flesh*, he proposes to cure in the same manner; a remedy, we must say, disproportionately severe to the nature of the disease. Mr Rynd may be assured, that if he causes his patients to have their toe nails always kept short by careful paring, the lateral incurvation will cease entirely, and incision will become quite superfluous. This is the preventive, not the curative, treatment.

The paper is concluded with a long case which, we conceive, is by no means happily placed there. A puncture of the thumb by a new pin never before used, is followed by a local inflammation, suppuration, bubo of the axillary glands, erythematous sore throat, scarlet patches on the skin, nodes of the left tibia, scarlet spots on the back of the hands, and *rhagades* of the palms. On the nature of this disease we do not and cannot choose to speculate; but it is clear that it has little to do with the subject of the paper.

In a paper entitled *Contributions to Ophthalmic Surgery*, Dr Jacob begins with some interesting observations on stains of the *conjunctiva* and opacities of the *cornea* produced by the application of nitrate of silver, acetate of lead, oxide of iron, gunpowder, charcoal, &c.

From the observations of Dr Jacob it results, that, though the use of a strong solution of nitrate of silver for a fortnight does not stain the *conjunctiva*, its continuance for six weeks or two months will darken its hue. When the solution has been used a short time only, the tint is light olive, but sufficiently distinct to produce obvious deformity. When continued for a longer period, the stain is of a deeper shade, and tinges not only the *ophthalmic* but the *palpebral conjunctiva*, in which it appears still more conspicuously. From this susceptibility of receiving an indelible stain, Dr Jacob infers the similarity of structure between the *conjunctiva* and the cuticular surface of the *corion*.

The effect of nitrate of silver, when used for treating ulcers of the cornea, is still more serious. In the one case, it produces merely an unpleasant stain. In the other, it produces an indelible black speck, which renders the part permanently opaque. This the author ascribes to the mineral salt, whether applied in solution or in substance, becoming entangled in the substance of the cornea during the process of healing, and not being thrown off as a slough. To obviate this inconvenience, therefore, Dr Jacob recommends that, after it is determined to use the nitrate, it should be applied by the tip of a fine camel hair pencil to the ulcer, with a steady hand, while the eye is steady, and that it should be repeated till the surface of the sore becomes white and decomposed; after which it ought to be well syringed with water, while the eyelid is prevented from touching the eye, or the eye from moving upwards.

A still more severe injury is produced by the application of acetate of lead to ulcers of the cornea. The salt is decomposed, and a white precipitate adheres obstinately to the ulcer, and during the healing process becomes permanently incorporated with the substance of the cornea, forming a white chalky indelible opacity. To produce this change, a single application appears sufficient; and Dr Jacob has observed it the next day after a solution of acetate of lead had been put into the eye by mistake. Though it appears, further, that not every ulcer, nor every condition of an ulcer, is followed by this change under the use of acetate of lead, Dr Jacob does not attempt to define the particular circumstances which may indicate the probable occurrence, but merely mentions that it occurs most frequently where sloughing and ulceration attend purulent or pustular ophthalmy, and when the ulcer presents a dirty white unhealthy appearance.

These changes are doubtless altogether chemical. In the case of nitrate of silver, the salt is decomposed by two agents, the albuminous matter of the sore and the chloride of sodium of the tears. The surface of the sore, therefore, becomes covered by coagulated albumen and chloride of silver; and it appears that the combination of the latter salt, which is insoluble, in minute chemical division with the particles of the albumen, constitutes the dark speck afterwards observed. A similar change appears to take place with the acetate of lead, (*vide* note at the end of the paper;) the albumen is coagulated, and phosphate, carbonate, and chloride of lead are precipitated.

Specks of iron stain the cornea in a similar manner, by occasioning ulceration, and then becoming oxidated. For these stains no remedy is yet known.

Dr Jacob proceeds next to make some observations on the removal of obstructions in the lacrymal passages. He recommends, in the *first* place, the use of the syringe, with the twofold purpose of ascertaining the nature of the impediment, and the possibility of removing it in the gentlest and least forcible mode. Injection by the lower *punctum* should be first attempted; and it is easily exposed, or rather turned, to the point of the syringe, by drawing the lower eyelid downward and outward, while the surgeon stands behind the patient, and inserts the point of the syringe in the small cartilaginous aperture. The transit of the fluid into the pharynx indicates the permeability of the canal; but its not being felt in the pharynx, or its escape by the upper *punctum*, does not, in like manner, prove that the passages are permanently obstructed. The superior *punctum* being compressed and closed, the sac should be distended with water, which should by compression be forcibly impelled forward, when it will generally pass into the nostril. If it remain closed, notwithstanding these measures, Dr Jacob tries to introduce a flexible probe, exactly on the same principle in which a catheter is introduced into the urethra in retention of urine. The obstruction may consist in indurated mucus, inflammatory swelling of the lining membrane, or actual stricture.

The first cause is most easily removed; and if, while water cannot be forced through, a probe be made to pass, there is reason to believe in its existence. Dr Jacob finds that, by directing the patient to compress the sac frequently in the course of the day, and blow the nose, while the nostrils are held to inspire strongly, the air may be exhausted from the nostril and nasal duct, and the contents may be expelled.

The treatment of the inflammatory obstruction Dr Jacob begins by compressing the sac, and injecting water to ascertain the degree of impediment. If fluid does not pass, he attempts a bristle or an elastic flexible probe without violence. If the probe pass, he infers that it results from inflammatory tumefaction; but if its transit be firmly resisted, he regards it as a case of permanent stricture. In the former case, he recommends the usual antiphlogistic means, by applying leeches over or near the sac, if it be tender to the touch, and of astringent solutions to the surfaces, in the dose of ten grains to the ounce. Dr Jacob finds, that saturated solutions of acetate of lead or alum are useful; and with these he fills the sac, and forces a small quantity at least through, in order to act directly on the inflamed membrane. Even without a syringe these solutions may be impelled into the sac, Dr Jacob thinks, in the following manner. While the patient is seated in a chair with the head inclined backward, the sac must be compressed by the tip of the finger till it is emptied, and the inner angle of the eye is then filled with the solution. This being done, and the head retained in the same position, the eyelids are opened by drawing the upper one outward and upward, and the lower downward and outward. The effect of this is to raise the sides and margin of the compressed and emptied sac, and consequently impel the fluid placed at the inner angle into it by atmospheric pressure.

The permanent stricture must be removed by the introduction of probes; for instance, a firm bristle with the extremity rounded and polished, or silver probes of various sizes. The details of using these probes must be studied in the paper of the author.

In treating of the cure of *entropion*, Dr Jacob practises the following modification of Dr Crampton's method of operating for inversion of the lower eyelid.

"I am provided with a fine hook, made by turning a common sewing needle of about number eight, and fixing it in a cedar handle. The needle will seldom be found soft enough to admit of turning into a hook; but its temper may be reduced by holding it at the flame of a candle, and it will hold the curve thus given tolerably well; or a number together may be softened, formed into hooks, hardened, and again tempered. I prefer the needle thus prepared, because I never could obtain so neat and well tempered a hook from the cutler. I take such a hook in my left hand, and strike it into the cartilage of the lid near the outer angle, and pulling toward me, put the margin of the lid on the stretch; I then divide the lid perpendicularly, for nearly a quarter of an inch, with a small, probe-pointed, scimitar-bladed knife, which I hold in my hand; such a knife as is used for enlarging the incision of the cornea in the operation of extracting a cataract. I make a similar incision in the same way within an eighth of an inch of the punctum, and allow the parts to rest until the bleeding ceases; I then take a fine glover's needle, threaded with a silk ligature, pass it through the skin at the edge or margin of one side of the incision, and through the conjunctival edge or margin of the other, so that on drawing the ligature the divided surfaces may not again be brought into contact exactly as before the incision, but the conjunctival edge of one be united to the cutaneous edge of the other, and thus the lid gets a direction outward. This I have found not only secures a permanent eversion of the lid, but obviates the deformity of an unsightly notch which must exist if the edges be not united. The other incision next to the punctum should be treated in the same way; and if there be a considerable quantity of loose skin between the lower lid and cheek, a horizontal fold should be removed, as recommended for the cure of inversion, without reference to the operation of Mr Crampton's. It is necessary, however, to observe, that neither this operation alone, nor combined with the operation of removing a horizontal fold of skin below the lid, will be sufficient to cure the inversion in old persons who have a large quantity of pursy skin about the eyelids."—Pp. 389–391.

The operation for entropion of the upper eyelid he performs in the following manner.

" I pass the point of the fine hook, above described, beneath the upper lid, and draw the hook toward me until its point shows through the skin, at the distance of about a line from the external angle of the eye; an assistant standing behind draws up the skin of the eyelid to make it tense; I then, with common strait scissors, cut into the upper lid between the point I have hooked and the external angle of the eye, continuing the incision by repeated clips of the scissors along the eyelid, and at a distance of something more than a line from the margin, until I come to the punctum; in fact, I simply clip away the ciliary margin of the eyelid from the angle to the punctum, including skin, cartilage, and roots of eyelashes, and not leaving any notch at either end, but sloping the incision as I cut in at the outer angle and out at the punctum; I thus obtain a regular edge, and leave a portion of the cartilage sufficient to preserve the natural form and motions of the lid."—Pp. 391, 392.

In the observations on the effect of tapping the eye in hydrophthalmy, and pellucid *staphyloma*, there is nothing particularly interesting. The treatment of staphyloma by the seton seems to present no advantage over that by incision; and we cannot help regarding it as adding considerably to the sufferings of the patient.

The case of tracheotomy by Mr W. H. Porter, and those of foreign bodies in the trachea, by Mr Rawdon M'Namara, may be noticed together, as they are closely allied in subject.

In the former case the operation was performed for symptoms of *laryngitis*, which had been opposed by blood-letting to syncope, and calomel given in ten grain doses three times daily, without avail. The only remarkable occurrence during the operation was that the presence of *emphysema* was clearly demonstrated by the blood bubbling up from the bottom of the wound, largely mixed with air. The operation appears to have given no immediate relief; for the patient rolled about in bed, gnashed his teeth, and coughed and struggled in great agony for nearly half an hour after its performance. Bronchitic symptoms continuing afterwards, blood-letting was repeated, and the calomel was continued, first alone, then with antimonial powder. On the fourth day after the operation, December 2d, the removal of a valvular slip of the *trachea*, which interrupted respiration, gave some relief; but though the mouth was now affected by mercury, and the bronchitic symptoms were subsiding, the laryngeal distress continued unabated. From the 4th to the 13th December he had occasional paroxysms of *dyspnœa*, not from the tendency in the wound to close, though that was taking place, but from some change in the parts within the larynx. At this time the breath was very fetid, like that of patients labouring under laryngeal *phthisis;* and a silver catheter introduced by the wound was deeply blackened. Two days after, on the 15th, a new symptom appeared, in every drop of liquid swallowed escaping by the wound, indicating that a communication had been established between the pharynx and larynx. At the same time much emaciation with night sweats and other hectic symptoms were conjoined. On the 21st December, in a fit of coughing, one of the arytenoid cartilages, in a state of earthy degeneration similar to carious bone, was expelled; and the following day the pulse fell to 44, regular and of good strength; the power of swallowing increased; the fetid odour of the breath diminished; and the appetite improved and strength returned. By the middle of January, though he still had a hectic flush and was much emaciated, the pulse was only 44, and his strength was good; the communication between the pharynx and windpipe was closed; no fluid passed by the wound; the respiration through the tube was uninterrupted; and he left the hospital free from complaint.

The result of this case shows that it originated in death of the arytenoid cartilage and its subsequent discharge by ulceration; that the emphysema was caused by the air being forced through the breach of surface into the cellular membrane; and that the communication between the pharynx and larynx was occasioned by the membranous wall between the arytenoid cartilages, and immediately over the cricoid being involved in the disease, and temporarily destroyed by its ravages.

Mr M'Namara relates two cases of tracheotomy for the removal of foreign bodies,—in both plumb-stones, from the windpipe.

In the first, the patient, a boy of four, had allowed a plumb-stone to slip into the *trachea*, in speaking while eating a damson tart. After two days and a restless night the stethoscope indicated on the following day respiration of left side more puerile than natural, with sonorous *râle* superiorly; respiration of right side extinguished; yet the chest on both sides sounded well; after a sudden and violent effort of expiration, respiration of the right side, previously inaudible, as distinct and intense as on the left, with a valve-like flapping noise against the *glottis* in the larynx. The usual incisions and the division of three rings of the trachea were followed by diminution of voice, and during a fit of coughing, a large plumb-stone was forcibly projected through the wound to the height of two or three feet. The case after this proceeded favourably.

In the second case, a boy of nearly the same age, had allowed to slip into the windpipe a plumb-stone, through which he had bored a hole, and which he was using in whistling like a bird-call. In consequence of this peculiarity in the mechanism of the body, the boy could voluntarily make a whistling noise, audible at a considerable distance, by expiring forcibly, and thereby impelling the air through the aperture in the stone. An incision an inch long was made into the larynx and trachea with the crico-thyroidal space in the middle; and as the stone was not expelled by this opening, Mr M'Namara introduced a flexible catheter, in order to dislodge it and press it into the pharynx. This was supposed to be accomplished by the boy being no longer able to whistle through the plumb-stone as before, though the wound was closed for the purpose, and by his asserting that he had swallowed the stone while it was thrust upwards. Laxative medicine was administered the day after the operation, and the stools were carefully searched without recognising the stone. The case proceeded well for eight days; but on the 13th respiration was found to be extinct on the right side, which, however, sounded clear on percussion, while on the left it was more audible than natural. This led to the suspicion that the plumb-stone was lodged in the right *bronchus*; and accordingly the stethoscope indicated the deep rough rustling formed by the motion of a body in the trachea; and the boy was also able to whistle faintly through the plumb-stone. On Saturday the 16th September, eleven days after the first operation, Mr M'Namara dilated the wound downwards about half an inch, when the stone was forcibly projected from the wound by coughing. In six days after the boy was dismissed well.

At the end of this paper Dr Plant of Black Rock communicates a case in which a boy of eleven allowed a piece of wood as large as a sixpence, and a line thick, to slip into the trachea. This was followed by violent coughing for three days, and pain referred to the right lung. For four weeks after he was free from constitutional disorder and any complaint, except a troublesome cough. At the end of the fourth week, after a violent fit of coughing, the pain of the side disappeared, and the boy complained of something sticking in his throat. As the cough was relieved, and there was no very urgent symptom, Dr Plant determined to wait, to see if the body which had been already expelled from the *bronchus* might not also in like manner be projected from the windpipe; and happily this took place at the end of the fifth week, being exactly thirty-five days from the time when the wood dropped into the windpipe.

The only other papers requiring notice are the Reports of the Wellesley Institution and the Coombe Hospital, for puerperal females; and as both are on the same subject, and somewhat different from the other papers in the volume, we shall combine their examination in a separate article.

ART. III.—1. *Report of the Wellesley Female Institution.* By SAMUEL CUSACK, A. B. M. B. Assistant Surgeon to the Institution for the Diseases of Children, &c. &c.

2. *Report of the Coombe Lying-in-Hospital.* By RICHARD REED GREGORY, Member of the Royal College of Surgeons in Ireland, Master of the Hospital.

FROM these reports some idea may be formed of the state of obstetric medicine and surgery in Dublin. This city has been long distinguished for the valuable opportunities which it affords to its accoucheur practitioners; and to do them justice, they have not been inactive in availing themselves of their means.

The Wellesley Female Institution is not an hospital for the accommodation of parturient and puerperal females, but merely a sort of dispensary to which they apply for assistance, and the officers of which attend them at their own houses.

The Coombe Hospital, on the other hand, is an establishment consisting of four spacious and well-aired wards, containing altogether thirty-six beds. One ward is set apart for the accommodation of those whose circumstances do not require them to be supported at the expence of the institution. There is accommodation for six resident pupils; and an extensive dispensary attached to the hospital, affords ample opportunities to the pupils, resident and non-resident, for becoming acquainted with the diseases of women and children, and their treatment.

The Wellesley Female Institution was opened in the end of 1826; and from that date to the 31st December 1828, the number of cases attended amounted to 398. Of these there were twelve preternatural labours; four cases of presentation of the upper extremities, and eight of the breech and lower extremities; three instrumental, one requiring the forceps, and two the perforator.

From the close of December 1828 to October 1829, the number of registered cases amounted to 303, of which one was a case of presentation of the upper extremity, one of the face not interfered with, and six were presentations of the lower extremity. In two instances the face was turned towards the pubis. In five cases there were twins. The perforator was employed three times, and in three cases the forceps were used. In one of these the fœtus was acephalous, and the labour was retarded by the large size of the body.

The amount of cases, therefore, from the opening of the institution to the close of October 1829, is 701; and the varieties may be stated in the following manner.

Natural presentations, . .	679
Upper extremities, . .	5
Face, ...	3
Breech and lower extremities	14
Perforator cases	5
Forceps cases, ...	4
Twins, ...	5
Protrusion of the chord, .	5

Of the upper extremity presentations two were born dead; but all were favourable to the mother. In three, turning was easily effected; but in the fourth the uterine action required to be moderated by the previous exhibition of 120 drops of laudanum. All the lower extremity presentations were also favourable to the mother. Those cases in which the head was wedged in the pelvis, by injudicious attempts at extraction, previous to application at the dispensary, terminated fatally for the children. Two face presentations not interfered with, though tedious, terminated favourably for mother and child.

The Coombe Lying-in-Hospital was opened on the 3d February 1829; and from this period to that of the date of the Report, 691 patients were delivered in it, and 196 were attended at their own houses, forming a total sum of 887 persons relieved by the Charity within the space of one year or rather less. Of the internal patients 9 died. The varieties of the labours are as follow.

Natural presentations,	645	Shoulder,	1
Face,	2	Chord,	7
Breech,	14	Twin cases,	12
Feet,	7	Placenta,	0
Arm,	3		
			691

In two of the twin cases the breech presented, in two others the head; in one the first child presented the head, the second the feet; in another the first child presented the breech, the second the arm; the other six presented the head and breech.

The following table exhibits the number of births, the sex of the children, and the still births, arranged according to the ages of the mothers, from 15 to 45 inclusive.

From	Males.	Females.	Total Births.	Still Births Males.	Still Births Females.	Total Still Births.
15 to 20	19	15	34	2	2	4
20 to 25	114	93	207	14	6	20
25 to 30	100	88	188	9	7	16
30 to 35	106	79	185	10	2	12
35 to 40	33	23	56	1	1	2
40 to 45	15	17	32	0	1	1
45 to 50	0	1	1	0	0	0
	387	316	703	36	19	55

Of the still births 29 were premature; 2 abortions; 8 natural cases; 3 arm presentations; 3 feet; and 4 breech presentations; 3 crotchet cases; 4 prolapse of the chord; four of the 12 twin cases also were still-born.

Premature labour and abortion seem to be circumstances of frequent occurrence among the females of the lower ranks in Dublin; and as such it attracts comparatively little attention. This is attributed by one of the present authors, Mr Gregory, to irregularity of living, and the brutal treatment which the women often receive from their husbands. The circumstances under which women apply for relief in this case are various. In some instances it is hemorrhage, in others retention of part of the ovum, and in others derangement of the general health consequent on abortion. Hemorrhage was arrested in the usual manner by cold applications, rest, cool air, and abstraction of all stimuli. Manual extraction of the placenta was not attempted unless after the sixth month.

Instrumental deliveries appear to be not common. In the Coombe Hospital one woman, after giving birth to a healthy male child of the usual size, had a second extracted by fixing a hook on the thorax and employing some force. In one of the crotchet cases sloughing of the neck of the womb and adjoining parts took place, and caused death fourteen days after delivery. In another the mother died three weeks after; and on inspection there were found ulceration of the vocal ligaments, inflammation of the bronchial mucous membrane, and two small abscesses in the substance of the womb.

Of seven fatal cases after delivery one died of rheumatic fever in a fortnight; one died instantaneously of hemorrhage; one died of inflammation and suppuration of the *uterus* and right pelvic cellular tissue; one of inflammation and mortification of the upper and inner part of the *uterus*; two of consumption; and one of *bronchitis*.

Convulsions are a distressing, if not a frequent, source of embarrassment to the accoucheur. Among the females attended at the Wellesley Institution only six cases of puerperal convulsions appear to have taken place; and of these two occurred between the fifth and eighth month, three during labour, and one after the process. In the first and last they were probably connected with the constipated state of the bowels; as they were altogether removed by purgatives. Of the cases in which they occurred during labour, in one patient who was delivered by turning, they were suspended during this operation, but recurred after delivery, and destroyed the patient; another, who was delivered by the crotchet, recovered from the convulsions, but died subsequently of peritoneal inflammation; and a third, who was relieved during labour by depletion, cold applied to the head, and purgatives by the mouth and *enemata*, was finally delivered by the forceps, and both mother and child did well.

It has ever appeared to us doubtful how far turning, or any other mode of facilitating or accelerating delivery, by manual or instrumental aid, is calculated to relieve or remove convulsive attacks during pregnancy or parturition. Though these convulsive attacks are doubtless aggravated by the peculiar circumstances of the patients, they are not so necessarily connected with labour as to require very active interference with the process for their removal. In the majority of cases, and it will do no harm to say all cases, convulsions in pregnant and parturient women are most successfully treated as convulsions in general, that is by blood-letting according to circumstances, shaving the head, and cold applications, and the use of those purgatives which empty the bowels without irritating. It is further never to be forgotten that the use of blood-letting, instead of being prejudicial previous to or during parturition, as has long been erroneously imagined, is the very best means of facilitating the process both to the patient and to the practitioner; and if more frequently practised at this period, would preserve many women from uterine hemorrhage, peritoneal inflammation, and several other fatal or troublesome disorders which supervene on the puerperal state. It cannot be too forcibly impressed on the minds of those who have the management of pregnant and parturient females, that the whole train of disorders which cause so much suffering and distress to women in this state, are either much aggravated, or entirely caused, by excessive fulness of the vascular system.

Dr Cusack seems not to place so much reliance on this remedy as it deserves. But while he justly attaches importance to the evacuation of the bowels, and the use of cold applications, we beg to suggest to him the question, how long the former means are before they exercise any influence on the fits, and how much more efficacious the loss of twenty or twenty-five ounces of blood renders all the other agents in controlling the disease? The doctrine of *nervous irritability* is certainly a sufficiently good and convenient one; but while we know that the most frequent and powerful irritant of the nerves is an excessive quantity of blood in the vascular system, we should hesitate in allowing it to tie our hands in the use of the lancet.

The observations on the use of spurred rye do not speak favourably for the influence of that substance in expediting and accelerating labour. Of 12 cases in which it was employed, it produced in six no perceptible effect; in three, in which it was given in half-drachm doses, it was followed by apoplectic symptoms,—viz. slow pulse, stupor, epistaxis, &c.; and in one case only, in which ten grains were given in infusion, pains came on immediately after, and the placenta was expelled after being retained three hours.

In a case of severe puerperal inflammation of the joints, the only one which occurred, apparently, the inflammation of the knee-joint yielded to treatment, and was resolved, while that of the ankle-joint terminated in superficial abscesses. But the circumstance which the author is most anxious to impress is, that *in no stage whatever of the disease were any symptoms of venous inflammation discerned.* This we willingly believe. But it may be answered, that such a circumstance in one case proves very little, or rather nothing, against the body of evidence adduced by Mr Arnott.

For some observations on cases of uterine hemorrhage, and the modes of checking it, and various other maladies incident to females, either immediately or remotely connected with parturition, we must be satisfied with a general reference to the Report itself.

ART. IV.—*The effects of the principal Arts, Trades, and Professions, and of civic states and habits of living, on Health and Longevity; with a particular reference to the trades and manufactures of Leeds: and Suggestions for the removal of many of the agents which produce disease and shorten the duration of life.* By C. TURNER THACKRAH. Longman, &c. London. 1831. Pp. 126. 8vo.

THERE is, we will venture to say, no country in the world where the effects of trades on the health and longevity of the workmen who follow them are so extensively pernicious as in Britain. For there is none where the proportion of the people employed in hurtful trades is so great, none where the workmen are congregated so much in towns and large manufactories, and none too, we believe, where the working hours occupy so large a part of the day. It is melancholy then to reflect how little has been done in this country by medical men or philanthropists out of the profession, towards ascertaining the nature and extent of these effects, as well as the means of correcting them, and how little encouragement has been held out by our government for such investigations. English medical literature has been till now destitute of a single general treatise on the diseases of trades and professions; scarcely can it reckon more than one or two monographs on special departments of the subject; and on one occasion only has the government interested itself in the fate of the sickly and short-lived artizan. No one will feel surprised at the apathy of a government, which has long been notorious for indifference to scientific inquiries. But it must certainly excite astonishment, that, notwithstanding the mania for publishing, which has for many years, but more especially of late, prevailed in the medical profession,—so few persons have been found to take up this department, rich as it is in sources of information, pregnant as it must be in important practical results, and free too of that repulsive triteness which ought, we conceive, to protect most of the other branches of medicine from the approaches of two-thirds at least of those who will insist on becoming authors.

The fact is, however, that the investigation of the extent and causes of the unhealthiness of artizans is not one which can be advantageously carried on without much labour and assiduity. The sources of information are indeed unbounded. But in repairing to them the inquirer must be prepared to encounter numerous obstacles from the aversion of masters, the apathy and ignorance of workmen themselves, the difficulty of following out the history of a sufficient number of individuals for a series of years, the fallacies arising from the co-operation of other circumstances on the health besides those depending purely on trade, and many other impediments of the like kind. On these accounts it would be vain to expect very satisfactory results from the investigation of any single individual on the effects of trades generally,—the subject being much too comprehensive. The medical philosopher of the present day will not be contented with the vague general statements, oftener perhaps erroneous than sound, which unprofitably cover the pages of Rammazzini, or his modern imitator Patissier. He must have special facts, numerical comparisons, in short, complete statistical documents; and till these are procured our knowledge of the effects of trades on the health, is in its infancy merely, and unworthy of being relied on in any inquiries into the necessity or means of correcting their unhealthiness. Documents of the kind can only be collected after many years of attentive observation in situations where the observer has ready access to extensive establishments. It is therefore by means of a series of monographs, and by the unconnected labours of individuals employed on individual branches, that this important department of medical police is to be properly illustrated. As an example of the method of investigating such subjects, we may refer to the admirable paper of MM. Parent-Duchatelet and D'Arcet on the state of health of the tobacco-manufacturers in France, as analyzed in the 33d volume of this Journal, or to a paper since published by the former of these gentlemen in the third volume of the Annales d'Hygiène Publique et de Médécine Legale on the health of the *Débardeurs* of the Seine.* In these papers the author has supplied the most minute statistical information on the diseases of the tradesmen, their annual mortality, the proportion who survive certain advanced periods of life, the age at which they are superannuated or compelled to quit their trade, and the average number of days they are confined by sickness throughout the year. We see no reason why medical practitioners attached to great manufacturing establishments in this country, or those living in their neighbourhood, should not be able to accomplish in a few years as complete an investigation into the healthiness, longevity, and particular diseases of different trades, as these specimens supplied by M. Parent-Duchatelet. And we need scarcely point out to them as an encouragement to attempt the task, how much would thus be contributed to one of the most important and alluring departments of medical science, how much they would be carried on in the pursuit of their inquiries by the never-failing charm of novelty, and how richly they would be rewarded by the magnitude, and, above all, the certainty of the results.

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* The *Débardeurs* are the operatives who bring firewood down the Seine to Paris from the forests towards its source. During the time they are at work they are almost always in the water up to the middle, while at the same time they are required to put forth great muscular strength in floating and landing the timber. They were

We trust Mr Thackrah will not suppose we undervalue his labours, while we thus point out the means by which we conceive the department of medical police he has begun to study is to be pursued to the best advantage. He must have found ample reason, in the course of his researches, to be satisfied that the subject of them is too extensive for one man to investigate with precision throughout all its ramifications. And he has shown too philosophical a spirit in his writings to allow us to imagine, that he would not desire to see the results at which he has arrived laid down in more specific terms, and supported by more precise facts,—by more exact and comprehensive numerical statements. He has given an excellent popular outline of the inquiry, and determined many important data as to the healthiness or unhealthiness of particular trades; and the general conclusions are, without exception, either obviously correct, or, so far as we can see, very near the truth. But much remains to be done by accurate statistical documents collected from the theatre of his researches as well as in other great towns, before we can have a distinct idea of the amount of unhealthiness produced by particular trades, or of the kind of diseases to which they engender a predisposition. In short,

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generally considered a very unhealthy set of men, and especially to be very liable to ulcers of the leg, rheumatism, and catarrh. But M. Parent-Duchatelet found that they are not at all subject to ulcers, and that, as Mr Thackrah has also remarked of other trades where the workmen are constantly more or less immersed in water, catarrh and rheumatism are fully less frequent than among other tradesmen apparently much less exposed to their exciting causes.

we consider Mr Thackrah's treatise in the light of a sketch or nucleus for the future formation of a systematic treatise. And we must add, that there is no other treatise on the subject which can be viewed in any other light, and that every other treatise of the kind falls infinitely behind the present in comprehensiveness and accuracy;—which indeed is not to be wondered at, as he is the only modern author who obviously writes from careful personal investigation.

As a proof of the extreme importance of his subject, he sets out with a statistical statement of the effects of trade and manufactures at large on the general mortality of the manufacturing district of Yorkshire, and more especially of the town of Leeds. Taking the data supplied by the Parliamentary census of 1821, the effect of manufactures on longevity in the West Riding of that great county is distinctly shown in the small proportion of persons who reach even middle age, and very remarkably by the small proportion who attain an advanced age. Thus, in every 20,000 inhabitants, there were 1702 between the ages of forty and fifty, 1204 between fifty and sixty, 815 between sixty and seventy, 378 between seventy and eighty, and 102 above eighty; while in the North Riding of the same county, where there are few manufacturers, the numbers of the same denomination are 1844, 1420, 1104, 629, and 230. The proportion of old persons above seventy was therefore nearly in the proportion of eleven to six in favour of the inhabitants of the district without manufactures. But the fate of the manufacturer and tradesman is still more palpably illustrated by the respective mortality in the town of Leeds, and in country parishes. In 1821 the mortality in Leeds was one in fifty-five; in the liberty of Ripon, not entirely a country district, one in sixty-seven; and in the agricultural parish of Pickering Lythe, one in seventy-four only. There can be no doubt that a great proportion of this amazing excess of mortality is owing to the unhealthiness of particular trades. It is to ascertain what these trades are, and what is the precise extent of the evil they occasion that the author's researches have been directed.

He divides trades and professions into four great classes, operatives,—dealers,—master-manufacturers and merchants,—and professional men. His investigations have been extended to all the four classes; but the greatest details and most precise facts will be found under the first head.

He considers operatives as subjected to causes of unhealthiness in six different circumstances,—1. When their habits are active, and their employment carried on chiefly in the open air; 2. When their employment is in confined and impure air; 3.

When they are exposed to inhale dust, odours, or gaseous matters; 4. When the skin is exposed to noxious substances; 5. When their bodies are habitually exposed to cold and wet; and, 6. When they are exposed to high temperatures or frequent vicissitudes of temperature. This arrangement appears judicious and perfect.

Operatives of the first class, whose habits are active, and who work much in the open air, are healthy, so far as their trade is concerned. Butchers, cattle-dealers, cart-drivers, labourers, brickmakers, chaise-drivers and postilions, coach-builders, carpenters and wheel-wrights, coopers, ropemakers, and paviers, he has found either actually healthy, or rendered liable to disease by habits of intemperance, rather than by their trade. A curious example of the influence of dissipated habits in a trade naturally healthy occurs in the instance of mill-wrights. In this trade, though an active one, the workmen often continue till past the age of sixty; but, in one department of it, that in which the shafts and wheels for conveying the power from the steam-engine to the machinery are made, the workmen are generally unhealthy and short-lived, for their wages are high, so that they can spend three days of the week in the pot-house, and usually do so. Another singular fact, in regard to the present class of operatives, is, that butchers, although they enjoy good health throughout life, nevertheless do not live long; at least, Mr Thackrah is inclined to think so, although his data are not precise enough to warrant a positive statement. And the reason is supposed to be, that they live too highly, so that a tendency to plethora is induced, the pernicious effects of which do not manifest themselves till about the mean term of life. If the alleged fact be true, we should imagine it to arise partly perhaps from the cause now stated, but chiefly from the co-operation of indolent habits substituted for a life of great activity about middle age.

Operatives of the second class, or those who carry on their trade in a confined or impure atmosphere, comprehend inhabitants of towns generally, but more especially tailors, stay-makers, milliners and dress-makers, spinners and cloth-dressers, weavers, burlers, frisers, and cloth-drawers, shoemakers, curriers, saddlers, printers, carvers and gilders, clock and watch-makers, smiths, cabinetmakers, house-servants, inn-waiters, colliers and well-sinkers. Among these trades there are several, the activity of which compensates for confinement, such as the trade of the cabinet-maker, spinner, currier and smith; but the rest are more or less unhealthy. A miserable picture is drawn by the author of the life of the unhappy tailors. They sit cross-legged, with the spine bent, in crowded apartments, often twenty degrees and more above the highest summer heat; and the majority of them have scarcely any exercise, not above half a mile's walking daily, except on Sunday. Hence the following account can excite no surprise:

> "The employment produces few acute diseases. But disorders of the stomach and bowels are general and often obstinate. Pulmonary consumption is also frequent. Some of the men state their liability to pains in the chest; but the majority make no complaint. It is, nevertheless, apparent, even from observing the expression of countenance, the complexion and the gait, that the functions of the stomach and heart are greatly impaired, even in those who consider themselves well. We see no plump and rosy tailors; none of fine form and strong muscle. The spine is generally curved. The reduction in the circumference of the chest is not so much as we might expect. The average of our measurements presented thirty-three to thirty-four inches, while that of other artizans is about thirty-six. The capacity of the lungs, as evinced by measuring the air thrown out at an expiration, is not less than common. The average of six individuals was seven and two-third pints, (221¼ cubic inches.) The prejudicial influence of their employ is more insidious than urgent; it undermines rather than destroys life. Apprenticed at an early age, tailors have their constitution modified to their employment. But its native vigour drawn off in youth to this adaptation of organs to external circumstances, gradually declines, and finally ceases before the natural termination of life. Of twenty-two workmen employed in Leeds, not one had attained the age of sixty; two only had passed fifty; and of the rest not more than two had reached forty."—P. 15.

To these observations Mr Thackrah adds, on the authority of a friend, that in the great establishment of Schultz and Co. London, among 334 workmen, only six are above sixty, and fourteen about fifty;—that three of the men above sixty have curved spine; and that they are so liable to fistula, that they have a "fistula club." They work thirteen hours a-day, and the temperature of the workshop in summer rises as high as 98° and even 108° F.

On the other trades comprehended under the present class, the author has not brought forward any very precise facts. He states, however, that he was unable to hear of any type-compositor above the age of fifty, and that this appears to be also the usual term of life among colliers.

The third class includes the trades which produce dust, odour, or gaseous exhalations. This embraces some of the most fatal of all the unhealthy trades. All such trades, however, are not injurious. Starch-makers, rectifiers, bricklayers, lime-workers, plasterers, wool-sorters, turners, and tobacco-manufacturers, although exposed some of them to dust, and others to odorous and gaseous emanations, are not, in consequence, rendered unhealthy. Some analogous trades are even beneficial. Rape and mustard crushers, who inhale peculiar and stimulating odours,—brush-makers, who breathe the dust of bristles, the vapour of charcoal, and the steam of pitch,—grooms and hostlers, glue and size-boilers,—buckram manufacturers, tallow-chandlers, and tanners, are on the whole healthy, if not intemperate, and a considerable proportion of them reach an advanced age. But the following trades, on the contrary, are pernicious. Corn-millers never reach a respectable old age, and become asthmatic in early life,—obviously on account of the dust in their working apartments, because their occupation is otherwise active. Malsters are even worse circumstanced; for in addition to the dust, they are exposed to a high temperature. Tea-men, coffee-roasters, snuff-makers, rag-sorters, and paper-makers, all suffer more or less inconvenience; but it is doubtful whether their trades tend to shorten life. There is no doubt, however, of the extreme unhealthiness of workers in flax. In all the operations where dust is formed, but particularly in the heckling department, the people become subject to indigestion, chronic bronchitis, pneumonia, and pulmonary consumption. Few persons can persevere in the heckling process for thirty years, and in a large establishment no person had continued forty years. In a flax mill employing 1079 work people, there were only nine who had attained the age of fifty, and of the remainder only twenty-two were forty. The following narrative surely establishes good grounds for the same legislative interference which was not long ago exerted in favour of the cotton-spinners.

"Formerly, heckling was effected by hand, now it is performed chiefly by machinery; and fewer men and more children are employed.

"The substitution of children for adults produces less apparent and immediate evil. Young persons are observed to bear the occupation much better than those of full age. They do not manifest serious disease in the lungs. They are indeed very sickly in appearance, and their digestive organs become impaired; but they make no urgent complaint, and are able to pursue their labour with little interruption. At thirteen or fourteen years of age they are dismissed from the mill, or transferred to another department; and thus they avoid the effects of bronchial irritation, which at a later period might lead to consumption. I am by no means convinced, however, that young persons escape without ultimate injury to the lungs. Children from seven to fifteen years of age go to work at half past five in the morning, and leave at seven in the evening,—or at half past six and leave at eight,—and thus spend twelve hours a-day for five or six years in an atmosphere of flax dust. * * * The conservative principle long struggles against injurious agents;

and at the period referred to seems especially to resist the baneful impression of air mechanically vitiated. But the principle itself must suffer; We have before remarked, that it appears to become weaker from exertion. The power, which in a natural state would carry the body to the age of seventy or eighty, is prematurely exhausted; and human beings, like our horses, when worked at too early an age, may be said to decay before they arrive at the term of maturity.

"* * * No man of humanity can reflect without distress on the state of thousands of children, many from six to seven years of age, roused from their beds at an early hour, hurried to the mills, and kept there, with the interval of only forty minutes, till a late hour at night. * * * Nay children are sometimes worked even in the night. * * * The diminution of the intervals of work has been a gradual encroachment. Formerly an hour was allowed for dinner; but one great manufacturer, pressed by his engagements, wished his work-people to return five minutes sooner. This abridgement was promptly adopted at other mills. Five minutes led to ten. It was found also that breakfast and 'drinking,' (afternoon meal,) might be taken while the people were at work. * * * The unfortunate artizans, working before in excess, have now to carry labour to a still greater and more destructive extent. The sound of the steam-engine anticipates the cock-crowing of the morning. Nay, often it is heard through the night." —P. 48.

The author assures us that nothing but legislative interference will correct these flagrant abuses. He adds that he conceives the bad effects of the dust in flax mills may be in a great measure prevented by a contrivance similar to that which has been adopted in some of the grinding establishments in Sheffield. For a description of the apparatus, the reader may refer to a notice of Mr Knight's treatise on the asthma of the dry-grinders, in the Intelligence of the present number.

Another very unhealthy trade, whose evil effects depend on the inhalation of dust, is that of hewing-mason. We wish the author had been more explicit on this subject. From our own observations in this city we suspect no trade is more injurious, except perhaps that of dry-grinder; and we should have been well pleased to learn more particularly the result of his experience and inquiries in the same field. He states that masons from the nature of their employment have a good complexion, and are muscular and robust; but that they are liable to bronchial inflammation, and generally die before the age of forty. A distinction, however, must be drawn between the building and hewing-mason. The former probably lives as long as other workmen. The latter, as Mr Thackrah states, is short-lived, and commonly dies of chronic bronchitis or diseases of the heart. A mason of this class whom we attended some years ago, and who had been long foreman and knew every old mason in the town, died at the age of fifty-seven, and said he did not know a single hewing-mason within several years so old, but some building masons a good deal older. Another who died more lately at the age of forty-seven believed he was among the oldest, if not actually the oldest hewing-mason at that time in town. The fatal effects of this branch of their trade is so well known to the masons in this part of the country, that all of them who can, quit the employment of hewing after the age of thirty. Mr Thackrah says he is informed that those who work within doors live longer than those who work in the open air. But we have heard of the opposite opinion being held by building contractors,—the belief being that the Scotch masons suffer from working in sheds, while in some parts of England the health of the workmen is good, because they hew without being under cover. If the latter notion be correct, the reason is obvious. If not, then we apprehend the real cause of mischief is not so much the dust of the hewing as the general exposure to harsh and variable weather. The discrepance of opinion here alluded to is an excellent illustration of the importance of a strict statistical inquiry into the causes of unhealthiness in workmen. Whether the real cause be general exposure, or dust, we conceive that a remedy might be found for it.

Among workmen who suffer from dust, miners are mentioned by the author; and he states their own opinion to be, that they never suffer while mining through limestone strata, because this species of rock is always kept moist by springs, and that the cause of the shortness of their life is the dryness of the sandstone rock which they frequently encounter in their operations. This inconvenience might surely be easily remedied. We suspect, however, that a more serious cause of the difference between the danger of working the two rocks is, that the limestone, however dry it may be, has not the same tendency with sandstone to produce dust under the hammer.

There are many departments in the trade of machine-making where the workmen suffer from metallic dust. The filers of cast-iron in particular appear to suffer in an extreme degree. Their occupation calls for a sufficient exercise of muscular power, they work always under cover. They are on the whole a temperate set of men, and their chests are well developed, for Mr Thackrah found the average circumference of the chest in seventeen individuals to be 38½ inches, and the quantity of air expired after a full inspiration about 7½ pints. Nevertheless they all die early of pulmonary disorders. The author could not hear of any filer who had followed this trade for twenty years, and in two of the chief machine-manufactories in Leeds there were only two workmen so old as forty-eight. It is a remarkable circumstance that the workmen themselves consider the manufacture of wrought-iron articles free from danger; and this is exceedingly probable, because even in the process of filing there is scarcely any dust raised from wrought-iron.—The knife, fork, and needle-grinders are exposed more to metallic dust than any other class of tradesmen, and accordingly they appear to be the most unhealthy of all workmen. Mr Thackrah has had no opportunity of investigating the amount of their unhealthiness; but the reader will find a full examination of the subject in an analysis of a late paper of Dr Knight in the Intelligence of the present number of this journal. The remaining artizans mentioned by Mr Thackrah, as liable to suffer from the inhalation of dust or vapours, are copper-workers, tinplate-workers, plumbers, house-painters, chemists and druggists, gas-light-men, and sewer-cleaners. But he has not been able to supply any precise information on the subject of their diseases or average mortality.

The fourth class of tradesmen are those who are exposed to the injurious action of various substances on the skin. Potters, hatters, grocers, and chimney-sweepers belong to this class. In the short notice which the author has given of these artizans we find nothing which we can properly transfer to our pages.

The fifth class comprehends those who are exposed to wet and steam. This is a numerous class in Leeds, as it includes wool-scourers, dyers, cloth-brushers, millers of cloth, hatters, brewers, and paper-makers. Their constant exposure to wet in one shape or another would naturally lead the careless observer to imagine that they must be subject to rheumatism, catarrh, and other pulmonary diseases. But the fact is, they live longer than many other tradesmen who apparently are less subjected to risk, and they are not particularly liable either to rheumatic or to pulmonary complaints. In this country, indeed, as the author mentions, we undoubtedly over-estimate the influence of cold and wet in occasioning disease. At all events, habitual exposure has not the pernicious effects which are dreaded by those who live under the perpetual fear of "catching cold."

The sixth and last class of tradesmen are those who are exposed to high temperature and frequent vicissitudes of heat. Among these the most important are bakers, cooks, and confectioners, wool-combers, cloth-dyers, cloth-singers, glossers, cloth-pressers, cotton and silk-spinners, glass-workers, and iron-founders. From an examination of this whole class of workmen Mr Thackrah is of opinion that exposure either to a high temperature or frequent vicissitudes is not necessarily injurious to the health;

and that where workmen seem to suffer from either of these causes, the real origin of their ill health is some other extraneous circumstance. His observations on this head deserve particular notice, and we shall therefore give his general conclusions in his own words.

> "Operatives habituated to high temperature daily feel effects similar to those felt by persons who occasionally place themselves in this temperature: Habit seems to have little power in rendering the body insensible to heat. The men daily have an excitement of pulse,—perspiration proportionate to the degree and continuance of the heat, and its complication with muscular labour,—thirst,—and languor. The complexion is rendered pale; and the digestive functions are impaired.
>
> "Persons exposed by their labour to great and frequent variations of temperature, are not more subject to inflammation of the lungs, or of the bronchial membrane, to pleurisy, or fever, than other men. Even the founders and dry-house-men, who many times a-day make sudden transitions of temperature, equalling often 100° or 120°, are neither sensible of inconvenience at the time, nor subject to pulmonary disorders.
>
> "Affections termed rheumatic are, I think, frequent in this class. If the exciting cause be referred to great and sudden changes of temperature, may not the predisposing cause be attributed to the unhealthy state of the abdominal viscera, induced by the excessive potation of fermented liquor?
>
> "Though the digestive organs are impaired, and perhaps the muscular power reduced, organic disease does not speedily result. Men working in high temperature are not often incapacitated for work. * * * * Though the operatives of this section do not live as long as husbandmen, they do not, on the whole, appear to be shorter-lived than the bulk of townsmen."—P. 78.

Nevertheless, several of the trades belonging to the present class are usually considered unhealthy. Bakers, though ruddy in youth, and muscular, are subject to cough, rheumatism, and dyspepsia, and are not long-lived. Glossers, "who smooth cloth by carrying over it heavy and heated plates of iron," cannot bear the trade after their 45th or 50th year; and some young men are obliged to abandon it. In these instances, the habitual inhalation of dust or intemperance is probably the cause of the shortening of life. For in some employments, where the heat is considerably greater than in those now mentioned, such as that of singeing cloth, drying cloth, combing wool, stuff-pressing, and glass-blowing, the workmen are undoubtedly healthy, and often continue at work till their 65th or 70th, or even 80th year.

In the three remaining sections of the work, which treat of the diseases and mortality among dealers,—among master-manufacturers and merchants,—and among professional men, there are some interesting general statements, but no specific facts; which, indeed, it is obviously very difficult to procure. We shall not attempt then to proceed farther with this analysis, hoping that what we have already done will illustrate sufficiently Mr Thackrah's general method of investigation, and encourage the reader to seek for farther information in the work itself.

On a single point only we must venture a few remarks, because it is almost the only one as to which we conceive he is in error; and it relates to the healthiness and chance of life in the medical profession. "As a profession," says he, "we are by no means healthy. Indigestion is general, and diseases of the lungs and blood-vessels are frequent. I am aware that several cases of great age will be immediately remembered; but while referring to cases like these, we forget the number who die in middle age and youth. Inquiring occasionally after those whom I knew as students, I have been often surprised at the number of deaths." This supposed mortality and unhealthiness he ascribes to too hard study in youth, and too great mental anxiety after being settled in practice. We suspect, however, the author is equally wrong in his facts, and in the supposed reasons for them. We do not imagine that medical students, however meritorious their exertions may be, work harder than students in other professions at the same time of life. Neither can we be easily persuaded that the anxiety of the physician is greater, or less liable to be blunted by habit, than that of the lawyer, merchant, or persons of other professions in the middle ranks of life. Least of all can we subscribe to the opinion that medical men are shorter-lived, or more unhealthy, or in particular more subject to indigestion than others in a similar station.

The work is appropriately concluded with some practical observations on the agents concerned in the increase of ill-health and mortality among artizans, and some judicious instructions on the best means of counteracting their injurious tendencies. These means he arranges under the following heads:—Good example and careful superintendence on the part of masters, which is very properly ranked among the foremost requisites;—fresh air,—bathing,—general muscular exercise,—curtailment of the working-hours,—and attention to occasional derangements of the health.

Art. V.—*Official Papers on the Medical Statistics and Topography of Malacca and Prince of Wales Island, and on the Prevailing Diseases of the Tenasserim Coast.* By T. M. Ward, M. D. and T. P. Grant, Esq. Pinang, Printed (by order of the Government of Fort Cornwallis) at the Government Press, 1830. Folio. Pp. 94.

THE territory of Ultragangetic India is a sort of large irregular peninsula, placed between the Gulf of Bengal on the west, and that of Cochin China on the east. Its northern division, at its junction with the Asiatic continent, contains the extensive kingdoms of Achem or Assam, and Ava, with the district of Arracan, on the east margin of the Bengal Gulf. This portion is traversed from north to south by the river Irrawaddy, which separates towards the southern extremity of the peninsula into numerous branches, inclosing low, flat, and, in general, woody deltas, and which at length find their way into the sea, along a space of coast, extending in a sinuous direction, between the 94½ and 97¼ degrees of east longitude, and distinguished by the name of the Gulf of Martaban. On the east of the valley of the Irrawaddy, a chain of mountains extends in nearly the same direction from north to south, as far as the district of Martaban, in the eastern angle of the Gulf; and then divides into two, the one terminating in the Gulf, the other bending to the east, and following the course of the land.

From the country of Martaban, the land extends southward, through not less than 15 degrees of latitude, in the shape of a long narrow Peninsula, which constitutes the *Chersonesus Aurea* of the ancients, and terminates within two degrees of the equator in a headland, on which is situate the city of Singhapura. This peninsular district, which lies between the Gulf of Martaban and that of Siam, contains, in the order from north to south, the country of Martaban, part of what is named Lower Siam, occasionally distinguished by the name of the Tenasserim coast, from a considerable river by which it is traversed, —the isthmus of Kraw at its narrowest part, and, finally, on the broader and more expanded part, called the Malay Peninsula, the districts of Quedau, Perak, and Salangor on the west, that of Tringanu on the east, and the small kingdom of Jehor at the southern extremity. The western coast of the southern half of this peninsula is washed by a portion of the sea, denominated the Straits of Malacca, and by which it is separated from the long mountainous island of Sumatra; while the eastern coast looks over the sea, which separates it from the round island of Borneo.

On the west coast, in the kingdom of Jehor, is situate the town of Malacca, in 2° 12′ north latitude, and 102° 10′ east longitude, and about 150 miles from the city of Singhapura. It is chiefly to the medical topography and diseases of this town and the neighbouring country that the first of the present papers relates.

The Malay peninsula, from its sea-girt situation, possesses, though within the tropics, and almost under the equator, a very equable temperature and mild climate. It is exposed to the influence of the monsoons, and has, like all intertropical countries, dry and wet seasons; but these, from its geographical situation and physical characters, are considerably modified. The proximity, indeed, of the island of Sumatra, and the narrow sea by which it is separated from the Malay Peninsula, modify considerably those atmospherical currents.

Whatever be the prevailing wind the sea breeze generally sets in from the south between 10 and 12 A. M., and continues till 6 or 7 in the evening, when, after a short calm, the land wind begins to blow from the north-east; and so uniform are these breezes, that unless during a storm the influence of the monsoon is scarcely perceptible. Gentle showers almost every evening, and heavier ones during the night, tend to cool and refresh the atmosphere; while the alternation of the sea with the land breeze already mentioned, maintain a singular uniformity of temperature. Throughout the year, indeed, the variation does not exceed 14° or 15° of Fahrenheit, being rarely higher than 88° or lower than 74°. The mean temperature, calculated from a daily register, was found to be 80°.

All these peculiarities, it may be imagined, are shared by the town of Malacca. Bounded on the south by the sea, with the coast running north-west and south-east, and on the east by the Malacca river, it occupies an area about 500 yards long by 400 broad. Of the streets which are regularly built and intersect each other at right angles, the principal is broad, open, and airy, and contains the houses of the Dutch inhabitants. In the northern part of the town, which is occupied by Malays, Klings, and Chinese, the houses are almost all brick, two stories high; and the streets are narrow, confined, and less clean than in the southern quarter. A little to the south of the town, and on the opposite bank of the river, is the fort, occupying an area of about 1200 yards in circumference,—a place of considerable strength till 1807, when the walls were razed, and the ditches filled by the English, and a few dilapidated bastions only left. From the centre of this area rises an eminence about seventy or eighty feet above the level of the sea, named St Paul's Hill, rather steep, clothed with verdure, and with many handsome houses erected round the base. In this quarter, which is the most airy and healthy part of the town, are situate the Sepoy lines and hospitals, and the European burial ground.

The most populous parts of Malacca, however, are the suburbs, of which the chief are, *Trankera* on the west, *Bandar Eeleer* on the east, and *Boongah Rayah* to the north. The first consists of a broad airy street, extending along the sea-shore, with numerous narrow, crowded lanes diverging from it, and chiefly occupied by Portuguese and Klings. *Bandar Eeleer*, in like manner, extends nearly a mile along the coast; but the houses, chiefly occupied by Portuguese, are situate mostly in a thick bed of cocoa-nut trees, with a marshy soil behind. *Boongah Rayah*, the houses of which are occupied chiefly by Malays and Chinese, is less extensive than either of the former.

The country in the immediate neighbourhood of Malacca is flat, and occupied by cocoa-nut trees and rice fields. Behind the suburbs of *Trankera* and *Bandar Eeleer*, on the west and east of the town, the ground is marshy during the whole year; and to these situations, Dr Ward thinks he could trace a few cases of fever. But diseases of this class are so rare, that he does not draw any conclusion regarding the salubrity of the climate. About 1200 yards from the fort the surface begins to be moulded into a group of small hills of little elevation, the highest not exceeding 200 feet, and the base of which occupy a space of between three and four miles in circumference. These hills, which are named the Chinese, consist chiefly of conglomerate, with a base of clay iron-stone. The soil of the surrounding country is light, and seems to consist of this rock in a state of decomposition. The more remote hills are stated to be all primitive gray granite and gneiss; and mines of gold and tin are said to be worked within a few miles of the town.

Among the vegetable products of the Malay Peninsula, rice and sugar-cane hold an important place. The former, which constitutes the chief food of the inhabitants, is said, when new, to produce diarrhœa, and occasionally dysentery. The *Bang koowang*, a species of *Dioscorea*, the *Gadung*, (*Dioscorea triphylla*,) and the *Ubi*, (*Dioscorea alata*,) different kinds of yams, and the sweet potatoe or *batata*, (*Convolvulus batatas*,) with other species of the same genus, also furnish nutritious articles of food. The more farinaceous varieties are ground into flour, resembling arrow-root, and then baked. Tapioca, sago, and maize, are also common. The bazaars are well supplied with gourds, cucumbers, melons, pumpkins, and most of the European vegetables cultivated by the Chinese. A species of *Alga*, named *agar agar*, found abundantly on the rocks and surrounding islands, is converted into a jelly, which forms a light and nutritious article of food for invalids, in situations in which animal jellies cannot be obtained.

Among the animals used as food, the flesh of the buffalo is most common. When young, it is tender and nutritious; but the flesh of the adult animal is tough and indigestible. Its use is confined, however, to the Malay inhabitants; as the natives of India, neither Moslem nor Hindo, are ever observed to use it. The flesh of the *rusa*, or horse elk, (*Cervus equinus*,) an animal between four and five feet high, inhabiting the neighbouring jungles, forms a valuable and useful article of food; but the supply is inadequate to the demand. Pork is used in considerable quantity by the Chinese. The pangolin, or five-toed *manis*, which is found in swampy spots near the shore, is hunted by the Chinese both as an article of food and for its scales, which are employed in their pharmaceutical compositions. The Dugong, (*Halicore dugong*) which, by the way, proves to be a term of Malay origin, is an inhabitant of the surrounding seas, and is occasionally, though too rarely, caught to constitute an important part of human food. It is by no means improbable, that it is owing to this rarity that the flesh of the dugong is held in such estimation, that it is reserved for the tables of the sultan and rajahs. By some of the old navigators, indeed, its flesh is compared to that of good veal; and it has been supposed capable of changing all the fluids of the body, and therefore has been commended as an unrivalled restorative, capable of curing gout, scurvy, and many other formidable maladies. But it requires little penetration to perceive that it has been very much overrated, and that it is quite inadeqate to such purposes. Besides these animals, elephants were frequently seen near the town twenty years ago; the jungles and forests are still infested by tigers; and monkeys, bears, squirrels, sloths, civet and wild cats, antelopes, and deer are in abundance.

Birds are numerous; but of the wild birds occasionally sold as game at the bazaars the following are the principal. The argus pheasant, (*Argus giganticus*;) pencilled pheasant, (*Phasianus nycthemerus*;) Malacca partridge, (*Cryptonyx coronatus*;) Indian quail, (*Coturnix textilis*;) black-necked quail, (*Turnix nigricollis*;) golden plover, (*Charadrius pluvialis*;) ringed plover, (*Ch. hiaticula*;) sand-lark, (*Arenăria vulgaris*;) lapwing, (*Vanellus gavia*;) bittern, (*Botaurus stellaris*;) freckled bittern, (*B. lentiginosus*;) whimbrel, (*Phaeopus*;) com-

mon snipe, *(Gallinago media;)* jack-snipe, *(G. minima;)* water-hen, *(Porphyrio viridis;)* purple water-hen, *(P. hyacinthinus;)* teal, *(Anas crecca;)* wild duck, *(Anas boschas;)* common pigeon, rock pigeon, turtle-dove, and green pigeon; and many others, amounting, it is said, to several hundred species, and several new and undescribed genera. The edible birds' nests, which are common to the whole Archipelago, and which are obtained from a species of swallow, *(Hirundo esculenta, H. fucifaga,)* are used by the Chinese inhabitants as a stomachic and aphrodisiac. They consist chiefly of gelatine, or isinglass, which, according to Sir Everard Home, is derived from the gastric glands of the bird.

Fish is abundant and cheap, and forms a common article of food. Of reptiles the hawks-bill turtle, *(Testudo imbricata,)* is common, and though much inferior to the green turtle of the West Indies, is used by all classes as food. The flesh of the *iguana* is reckoned a great delicacy, and, like that of the viper in Europe, is supposed by the natives to possess highly nutritient powers.

The inhabitants of the town of Malacca consist of five different kinds. Europeans to the amount of about 233, who are either Dutch and their progeny, or English; Malays, 3898; Mahommedan Klings, 1478; Hindoo Klings, 805; Chinese, 3989; and Portuguese or of Portuguese blood, though much intermingled with the native, 2289; making a total population of 12,687, exclusive of slaves, which form about 1400 more.

Of these the Malays appear by long intercourse with the Europeans to have laid aside that savage and ferocious disposition which is said to characterize them, and are described as a harmless peaceable race, indolent and averse to occupation, unless when stimulated by some particular object, as pleasure or the pursuit of game. The Malays of the coast, however, either fish, or man small merchant *prahus;* while those of inland situations cultivate rice for the supply of the village which they inhabit. Their chief food is rice, fish, and fruits of various sorts; but though a well made race, with the appearance of symmetry and vigour, they are subject to fevers and bowel complaints, and early acquire the aspect of old age.

Among these people medicine is at a low ebb. Originally derived, it is said, from the Arabians, it is encumbered by foolish and inert practices, and debasing superstitions; a circumstance which may be attributed to their peculiar theory of the origin of diseases which are very generally ascribed to the agency of evil spirits. Many diseases, therefore, may be said to be left to the course of nature. When remedies are employed they must undergo the previous operation of *tāwār*, analogous to the *taboo* of the South Sea islands, or the consecration of the Roman catholics, in consequence of which the remedy is supposed not only to be rendered efficacious, but to be secured against demoniac influence. Yet even there the physician finds traces of more rational and enlightened treament. Thus the cold affusion, which was long known among the oriental nations before it was employed by the Europeans, has been from time immemorial in use among the Malays in the treatment of fever and small-pox; the water being poured from a running stream abundantly over the patient till the heat of the body is reduced. In diarrhœa and dysentery they employ a decoction of the leaves of the common guava, the powder of coral, which is carbonate of lime mixed with animal matter, decoctions of the rhind of the pomegranate and mangosteen, and of the *maya-kannee*, *jelawee*, and *majee kling*, three kinds of astringent nuts, the plants of which Dr Ward had no opportunity of examining. In syphilis, rheumatism, asthma, and many other diseases, they use the root of the *Gadông*, (*Smilax Chinensis.*) In worms they give the juice of the *papaya* tree, and of a plant called *song song arvoo*. In itch and other cutaneous diseases they apply sulphur, the juice of various species of *fungus*, called *Chindàwan*, the leaves of the pepper plant, the egg plant, (*Solanum melongena*,) an herb named *bunaloo api*, and saffron. A bezoar stone, obtained from the porcupine, and named *Goolega landāq*, is used in almost all diseases, and is reputed an unfailing antidote to poisons. Its mode of exhibition is by giving the watery or the vinous infusion, which is said to produce vomiting; and from the intensely bitter taste which it communicates to the water in which it has been infused, there is good reason to believe it to be a gall-stone. It is so valuable in the estimation of the Malays that it is bought for its weight in gold.

The Chinese were among the earliest settlers in the Malay Peninsula, and still constitute a very considerable proportion of the population of Malacca, engrossing most of the trade, and a large proportion of the manufactures and handicrafts. Those who make fortunes soon return to China; but the supply is maintained by annual fresh importations, thus constituting a large alternate influx and reflux of genuine Chinese. In consequence, however, of the policy of the mother country which prevents the emigration of females, many of the Chinese, by forming connections with the Malay females have given birth to a mixed or half-caste breed, in which the original Mongolian features are obliterated or softened into an approach to the Malay mother, but with the oblique eye, long lank hair, and high cheek bones of the father. They are said to be a stout, well-made race, capable of much bodily fatigue, but deficient in courage. The lower orders are, on their arrival in the Malay peninsula, subject to phagedenic ulcer, resembling that of the Sepoys. The children are very liable to herpetic, by which we suppose the reporter understands cutaneous, diseases. All classes subsist on rice, pork, fish, and poultry, with vegetables variously dressed; and by the rich and high-seasoned cookery prevalent among the better ranks, with their inactive habits, they are generally successful in acquiring a considerable degree of corpulence,—a peculiarity which gives them singular importance in the eyes of their countrymen.

Among this part of the Malacca population medicine is not in a better state than among the Malay. For though the Chinese physicians have considerable reputation and some skill in China, those who practise the art in this colony cannot be said to equal those of the parent country. There are in Malacca five or six Chinese practitioners, whom their countrymen believe to be superior to the European physicians. But they are more entitled to the character of pharmacopolists, apothecaries, or drug-dispensers, than physicians. Of anatomy and physiology they are deplorably ignorant, and of the practice of surgery they know nothing. They pursue the hot unventilating regimen in small-pox, which, therefore, is extremely fatal among the Malacca-Chinese. They make great use in their medicinal preparations of such substances as *ginseng*, (*Panax quinquefolium*,) rhubarb, and *kohogg*, the *gadong* of the Malays, (*Smilax Chinensis.*)

That part of the Malacca population denominated *Klings*, amounting to rather more than 2200, are so named from the circumstance of having emigrated from that part of the Coromandel coast in which the *Telinga* or *Calinga* language is spoken. Rather more than 1400 of these are attached to the Islam form of belief; and about 800 to that of Hindu; both retaining with a good deal of firmness the manners, customs, and superstitions peculiar to their respective sects. They are said to be an industrious, quiet, inoffensive race of people; the better ranks of which are occupied in commerce, and the inferior in boating or fishing.

The diseases of Malacca are a good deal influenced by the revolutions of the seasons and the state of the atmosphere. The north-east monsoon, which commences about the close of November or beginning of December, by agreeing with the land-winds, and blowing over thick forests, and inundated paddy or rice fields loaded with moisture, generally induce remittent fevers, catarrhs, and rheumatic attacks. The clouds with which the skies are overcast, and the rains which they pour forth during the three or four subsequent months, while they keep the atmosphere singularly cool, rather augment than diminish this tendency to disease. Dr Ward thinks, nevertheless, that Malacca cannot be regarded as a place suffering much from marshy exhalations. In April and May, when squalls with rains are violent and frequent, the thermometer rises from 84° to 88° and 90°. In June, July, and August, when the south-east monsoon prevails, and the weather is dry, fine, and temperate, diarrhœa, dysentery, colic, cholera, and similar intestinal disorders become frequent; and at this season epidemic cholera appeared at Malacca, and the phagedenic ulcer became epidemic among the troops in 1827.

Of the endemic diseases, fever holds the principal place. From this the natives in the interior suffer little; and the disease with them assumes a mild remittent form, readily yielding to slight depletion and low diet. Europeans, however, after exposure to fatigue and the exhalations of the forests and jungles, are attacked occasionally in a more severe way, or with symptoms which, from their frequency in Pinang and the neighbouring part of the straits, have been distinguished as the Pinang fever. Eight or ten days after exposure in these woody and swampy regions, the patient experiences slight headach and occasional chills, followed after a day or two by violent headach, flushes of heat alternating with the chills, and great loss of strength.

> "His feet and legs are cold, while his face is flushed; his eyes swollen, and his head sensibly hotter than usual. The pulse is quick, hard, bounding, occasionally irregular even in the early stage; the tongue is loaded, and has numerous inflamed papillæ at the margins; and the thirst is frequently intense. After these symptoms continue for six or eight hours, they are relieved somewhat by the breaking out of a copious perspiration. In a few hours more, however, they return with increased violence, and dispel the hopes the patient had begun to entertain of his recovery. If the disease be neglected, or sufficiently active measures be not pursued at the early stage, symptoms of effusion in the brain occur on the fifth, sixth, seventh, or eighth days; and the patient dies comatose, or completely worn out."

In one fatal case, "the appearances on dissection were, a fleshy coagulum in the right auricle of the heart; the heart large; the internal coat of the large arteries of a light rose-red colour; the lungs healthy; the liver healthy; abrasion and ulceration of the mucous coat of the intestines, especially of the larger; effusion into the base and ventricles of the brain, with engorgement of the vessels; effusion into the spinal canal, and great engorgement of the vessels of the chord." Other two cases in Europeans were cured by copious blood-letting, general and local; blisters to the head and spine; and cathartics to clear the alimentary canal.

From the symptoms and appearances above described, Dr Ward regards the disease to be congestive fever, in its termination resembling typhus, with determination to the brain, spinal chord, and intestinal canal. In none of the cases which occurred at Malacca did the liver seem to be affected. It is further remarkable, that *hepatitis*, though quite as common among Europeans as on the Indian peninsula, is neither in the acute or chronic form frequent among the natives.

Diarrhœa and dysentery, which are at all times common among the inhabitants of Malacca, become particularly so in June, July, August, and September, when fruit abounds, and the temperature is highest. The attacks, however, yield in general to a few doses of castor oil, or to the remedies used by the natives already mentioned. Catarrh and rheumatism are the disorders of the cool humid months of November, December, and January. Mumps also sometimes appear epidemically at this season, as in Europe. A disease termed *asthma* is said to be common among the Malays, and by all accounts is nearly peculiar to that race. Cutaneous affections are common to the natives of all classes.

Of these the tubercular or Arabian leprosy, the *juzam* of the Arabs, and *kusta* of the Malays, is observed to affect the lower tribes of the latter. The symptoms are quite similar to those of the disease as observed in the occasional cases which have come to Europe. The number of lepers has been of late so considerable, as to require the institution of a lazaretto for their reception about two years ago. Since this period ten persons have been admitted, and four have died. The chief object of attention in this hospital appears to be the management of the local sores, which were treated with the turpentine liniment. Most of the cases were too far advanced to allow any other measures; and mudar was tried without effect. Though no circumstance has occurred to give any colour to the opinion, that the disease is contagious, and though it has been ascribed to uncleanly habits, and the use of gross innutritient food, yet these views are opposed by the fact, that in a few instances the disease has appeared in the persons of those who could not have been exposed to the operation of such causes.

Syphilitic affections, and gonorrhœa and its consequences, are said to be rare in Malacca. It may be doubted, however, whether this indicates the morality and chastity of the inhabitants.

It is remarkable, that, though dogs are numerous, and feed on all sorts of impure garbage and offal, hydrophobia is unknown not only in the Straits, but all over the Indian archipelago.

Among epidemic diseases cholera is the most conspicuous.

It made its first appearance in May or June 1819; a second time in December of the same year with great mortality; a third time in 1823; and the fourth in 1825, since which period it has not returned in the epidemic form. In these several attacks it is supposed to have destroyed between 700 and 800 of the inhabitants of the town of Malacca, or about 1 in 15 or 16 persons, independent of those cut off in the country, and the numbers of which could not be ascertained.

Small-pox, from the extreme obstacles to the general introduction of vaccination, is a great source of mortality. And though the vaccine disease was introduced some years ago, not only is it resisted by the prejudices of the Malays, but the *virus* employed appears not to be of the genuine kind; for, instead of producing the true vaccine disease, it induces merely a slight point of inflammation, or a vesicle filled with purulent matter. Some cases of post-vaccine small-pox have occurred; but they have been invariably milder than the cases of the disease in the unprotected.

The disease, however, most serious and unmanageable, is the phagedenic ulcer, a malady of extreme frequency among the native troops of Malacca in 1827 and 1828. This complaint appeared under two forms, the one acute, the other chronic, both attacking a previous ulcer, with gangrenous destructive inflammation. The acute commenced in the shape of a small circumscribed fiery spot, in an ulcer previously indolent, or in the sound skin, by a minute bright red pimple, which, on being scratched, was speedily converted into a sore. This extended rapidly with great pain, heat, and constitutional disorder, acquiring the size of a half-crown piece in less that twelve hours. The edges of this ulcer were raised, ragged, often deeply indented, and of a purple-red colour; and its surface was dry and ash-coloured, and discharged an ichorous acrid fluid. In a few days it spread over a large portion of the limb, converting muscle, tendon, ligament, and cellular tissue indiscriminately into a blackish or brown slough. This process was attended with considerable fever, in which the pulse was quick and small, the tongue white, dry, and loaded, and the patient irritable, restless and sleepless. It generally appeared in the lower extremities about the ankles, or in the front of the tibia; and in one instance only did it attack an abscess newly opened in an upper extremity. In the least severe cases the disease stopped after destroying only the skin and cellular tissue, the muscles and tendons appearing to escape the destructive action. In the most severe, and where the disease was not checked, the disease proceeded with increase of fever and irritability till it destroyed the patient. In one of the worst cases seen by Dr

Ward, it affected the whole foot, destroyed the toes, which successively dropt off, and terminated in separating the foot from the ancle, after which the patient died from the discharge and long-continued pain. In two cases it attacked a common sore on the penis, and completely destroyed the organ in both cases.

In the chronic form of the disease, the chief peculiarities were, that it was not only slower in progress, and less violent in action, but took place chiefly in sickly debilitated men, and seemed connected with a scorbutic state of the system. The edges of the sore were elevated, clear, and regular, red and shining, with an œdematous *areola* or ring of three or four inches breadth; and its surface consisted of a thick cream-coloured yellowish or brownish yellow very tenacious slough. The discharges were fetid to an extreme, tainting the atmosphere of the apartment. Occasionally greenish cauliflower excrescences sprung from the surface to a considerable height, and completely covered the ulcer. The ankle and posterior part of the leg were the regions most frequently affected; and in a few instances the ulcer involved great part of *gastrocnemius* and *soleus*, and destroyed altogether the *tendo Achillis.* Though the separation of the slough generally indicated the change of action and return of health, in some instances of extensive ulcers, one-half granulated and was cicatrized, while the other was sloughing. The most decisive symptoms of recovery were the disappearance of the fetid odour, a circle of healthy inflammation round the sore, and increase of pain, with amelioration of the constitutional disorder.

"In few cases, when severe, did either form terminate without loss of life or limb, or the destruction of such a considerable proportion of muscle as to render the patient unfit for further effective service. Amputation was performed in three; in two of these, however, at so late a period of the disease as not to succeed in saving the lives of the patients. Five in all died, including one who expired the day after his arrival from Pinang."

"The disease was evidently epidemic, depending either on some peculiar state of the atmosphere; or on some cause acting generally on the whole body of troops. It attacked young and old, robust and weakly, indiscriminately. Nothing occurred to create any suspicion of its being contagious; though, for the sake of security, every precaution, such as supplying clean sponge to every patient, avoiding contact or crowding, and separation of the bad from simple cases, was adopted."

The circumstances to which Dr Ward ascribes the origin of this disease are, besides neglect of cleanliness, meteorological peculiarities analogous to those concerned in the production of fever,—and the want of nutritious food. The agency of the former cause, he thinks, is shown in the following facts. In all the eastern countries in which the atmospheric moisture is considerable, for instance on the Malabar coast, in Ceylon, Arracan, and Ava, these ulcers prevail among Sepoys. In the present case the disease commenced among the troops, when they were still at Pulo Pinang, where humidity of the atmosphere is perhaps still greater than in the situations now mentioned. The accuracy of this view shall be considered forthwith. That deficient nutriment may have some influence, he thinks may be inferred from the fact, that the daily allowance of the Sepoy by the commissariat, viz. one seer of rice, four ounces of dhole, and two ounces of ghee, are inadequate to supply them with sufficient nutriment, in situations in which they are much exposed to vicissitudes of weather and corporeal fatigue. Those who limited themselves to this allowance, he seems to think, could not be sufficiently well fed. Another cause of perhaps equal influence is the circumstance of serving in a country to which they were not accustomed. The natives of Malacca are very seldom, it seems, and Europeans never, attacked with phagedenic ulcer. The Sepoy, on the contrary, is no sooner brought from the dry air and soil of his native Indian peninsula to the humid district of the Malays, than he begins to suffer from this disease in one form or other, and in more or less severity. The attacks of the disease also seem to be confined to those who have newly arrived in the peninsula; and only after they have been from two to three months exposed to the influence of the climate. After this period the constitutions of the men appear to acquire the power of resisting the operation of the generative causes, whatever they may be; for the disease ceases to appear.

The number of cases treated in the hospital during the year from 1st May 1827 to 31st April 1828, amounted to 222, of which 191 were dismissed cured, 8 were transferred, 5 died, and 18 remained at the date of the report, under treatment. Of these, the admissions were most numerous during the months of May, June, July, August, and September, being respectively in order, 23, 27, 25, 26, and 25. In October they fell to 19; in November they rose to 22, being only one fewer than in May; in December there were only 14; in January 8; in February 4; in March 5; and in April there were only 2 cases. It is rather unfortunate for the supposed connection between the prevalence of this disease and the state of the weather, that during the first five months the weather varied, and was as opposite as it well could be. Thus, though August and September are stated to be hot and dry, the end of May and the beginning of June are rainy, the latter with wind and Sumatran hurricanes; and July is remarked as fine, with occasional showers. If it be argued that some duration of weather is requisite to produce the effect, and that the dry weather of August and September may have tended to extinguish the disease during the subsequent months when the cases diminished so much, then it may be said, why did not the squally and rainy weather noted in October, November, December, and especially in January, aggravate, diffuse, and reproduce the disease? That this, however, did not take place, is sufficiently manifest from the tabular statement appended to the report; and we believe it cannot be said to be quite certain, that the mere circumstance of humidity of atmosphere is the primary cause of this distemper. If it were so, it appears merely to have exhausted itself by attacking all the susceptible subjects, until none were left upon which it could longer operate.

The treatment consisted, in the acute form, of emetics of antimony and ipecacuan at the commencement, regulating the bowels by calomel and antimony, perfect rest, local depletion by numerous repeated incisions followed by warm fomentations, opium in large doses to relieve pain, wine and arrack to sustain the powers, and latterly sulphate of quinine and nutritious diet. In the chronic variety these stimulants and tonics were exhibited from the first. The local applications were the turpentine liniment or hot dressing, dilute and concentrated nitric acid, solutions of nitrate of silver, balsam of Peru, tincture of camphor, powder of bark or of rhubarb, powdered nitre, either alone or with bark, with emollient, fermenting, or charcoal poultices. Of all these measures he, with some justice, seems to attach the greatest importance to that of the incisions, because they acted not on the dead but on the living parts, and allowed the other remedies to come in contact with the seat of mischief. It is further not improbable that the free local depletion was highly serviccable.

Before concluding this part of the subject we must say, that the disease now described bears a very close resemblance to the hospital gangrene of Europe. Its contagious or infectious character is indeed doubted by the author of the report. But we know not whether, if this fact were well established, it would be adequate to furnish a decisive proof of distinction for that disease.

Pulo Pinang, or Areca Island, is situate in the Malacca Straits, close on the coast of Quedau, between 5° 15′ and 5° 29′ north latitude, and in 100° 25′ east longitude. Its greatest length from north to south is about sixteen statute miles. Its greatest breadth at the north end between eleven and twelve miles, and decreasing southward to about eight miles, forming a superficial area of about 160 square miles. The greater part of the northern division is mountainous, a hilly chain traversing the east side of the island in a north-east and south-west direction; but the hills gradually diminish as they extend southward. The east side consists of a level tract nearly three miles broad, distinguished by the name of *valley*, occupied by George Town, the capital, the fort, the public buildings, barracks, hospital, and houses of the European inhabitants. On the west and south of the hilly range also is a considerable space of level ground of good quality for every species of cultivation; and about one-third of the island is estimated to be flat and slightly inclined. Most of it is now under culture. The east side, from its swampiness, is well adapted to the growth of rice, with which it is already chiefly occupied. The south and western valleys, though partly cultivated by the same grain, are chiefly devoted to pepper gardens and spice plantations. Every where close to the coast runs an extensive belt of cocoa-nut trees; and over the surface of the island are scattered numerous groves of the Areca palm, the *Pinang* of the Malays, from which the island derives its Malay name. The districts not yet cultivated, whether hills or low grounds, are thickly covered with wood and vegetable products in the most vigorous luxuriance. The mangrove is found near the shore in swampy spots.

The salubrity of Pulo Pinang is considerable; but it is much influenced by the clear or wooded state of the hilly districts; the former being much more salubrious than the latter.

Mount Erskine, a small hill rising near the coast above Pulo Ticoose Bay, about 350 feet above the level of the sea, rocky, yet overgrown with jungle, is productive of dangerous quotidian agues. Mount Olivia, more to the southward, 620 feet high, well cleared and planted with clove trees, thriving luxuriantly, is much more salubrious. The third elevation, distinguished by the ambitious name of the *Highlands of Scotland*, rises about 1428 feet above the level of the sea, and with a thermometric range 8° lower than in the valley, possesses a fine and healthy climate. Behind this, and near the centre of the island, an extensive table land, named the Great Hill, and much covered by wood, rises into numerous summits, all of which are either cleared, or cultivated, or built on. This is probably the best station for convalescents, both by its salubrity, and by the beauty of the views which it affords. *Bel Retiro*, the seat of the governor, eight miles from the landing-place at George Town, 2460 feet above the level of the sea, is also a healthy situation; and Mount Hygeia, immediately adjoining, is a convalescent station for invalids. Two miles west from Bel Retiro is the Western Hill, 2574 feet above the sea, the most elevated of the island. The summit is cleared; but it is neither cultivated nor built on. Two miles to the south of the Great Hill is Mount Elvira, 2370 feet high, cleared on the north, and planted with clove and nutmeg trees, but still wooded to the south and east, where it is believed to be occasionally productive of fever. The southern extremity of the hilly chain terminates in a groupe of hills, to which some Edinburgh nomenclator has applied the name of *Pentlands*, and which is now fully cleared and planted with cloves, nutmegs, and mangosteens. In this groupe the principal summits are *Lansdownehill*, 1800 feet, *Sans Souci*, 1380, and Belmont, 1650 feet high, commanding beautiful views of the southern, western, and great tree valleys. The thermometric range is from 8° to 10° lower than in George Town. A small chain of hills parallel with the sea coast, and forming with the Pentlands an acute angle, which includes the *great tree valley*, about 800 feet high, is undergoing the process of clearing and planting, and has produced many cases of ague and remittent fever among the Chinese workmen employed.

Though these hills are, during the greater part of the year, subject to fogs, which render the air damp and rather chill, it appears that the hilly climate is very healthy, and that invalids and convalescents from various severe tropical diseases speedily recover health and strength during a residence among them. The first effect of this air is drowsiness and increase of appetite, with diminution of the perspiration, and a proportional increase of the urinary secretion and the alvine discharges. The spirits, at the same time, improve. The pale sickly aspect of the intertropical countenance assumes something like European bloom and freshness. Convalescents from fever, dysentery, and hepatic disease speedily recover health and strength; and instances are said to have occurred repeatedly of patients too weak to move from their beds in the valley, becoming, a few days after removal to the mountain, able to walk about. Dr Ward thinks the Pinang air may be beneficial to invalids from the other Presidencies in India with chronic diseases of the stomach and bowels, or with general debility from long residence under the tropical sun, so as to supersede the necessity of a voyage to the Cape, New South Wales, or China. To phthisical and pulmonary invalids alone, he thinks it would be injurious, by reason of its hazy atmosphere, unless in the dry months of December, January, and February.

Pinang constitutes the Botany Bay of India, to which convicts for life or for a period of years are sent from the different

Presidencies. The number for the last nine years has amounted, on an average, to 1400. They are distinguished into classes, according to their length of residence or behaviour. Those of the first class are allowed to provide for themselves; those of the second are either hired or given as servants to the European inhabitants, or employed in public services, with a monthly allowance of four rupees for clothes and rations; while the other classes are employed in gangs on the roads in cutting wood, or in government works. From their irregular and disorderly habits, they are the frequent victims of disease, and suffer a proportional large mortality.

The population of George Town, the capital, amounted in 1829 to 34,775, of which the most numerous are Malays and Bugis, Chinese and Chuliahs, these tribes forming fully 29,000 of the whole, and the rest consisting of native Christians, Bengalese, Battas, Achinese, Burmese, Arabs, Armenians, and Parsees, nearly in the order enumerated. Besides these, however, must be mentioned Europeans to the amount of about 500, European troops 40, native troops, &c. 1100, making, with convicts, a total of nearly 38,000 as the population of the island.

The principal epidemic diseases are small-pox and cholera. The former recurs annually with more or less virulence, and to greater or less extent. It appears that during the last three years the vaccine lymph sent from Madras and Calcutta has not produced the true disease; and the young population have been unprotected. The causes of this failure are not understood.

Cholera, after passing the mountains of Arracan, proceeded through the Burmese and Siamese territory to the Malay peninsula, and reached the island of Pinang in October 1819. After raging violently during the month of November, during which the principal sufferers were the poorer class of Chuliahs and Malays, with a few Europeans, it declined gradually in December; and since that time it has not been known epidemically.

The prevalent diseases among the inhabitants of the town are fever, remittent and intermittent, especially quotidians, which are dangerous, and often fatal; diarrhœa, dysentery, and rheumatism; ulcers, occasionally assuming the phagedenic character; tubercular leprosy; and the Cochin leg. Catarrhal and pulmonic attacks are frequent about the period of the monsoons. Beriberi and *hepatitis* are rare. Cutaneous affections are common; and many melancholy instances of the loathsome effects of constitutional syphilis are seen. Worms, especially the *Ascaris lumbricoides*, are common among children, and even adults. *Trismus nascentium* is seen among the infants, and invariably fatal. Surgical cases from bites of alligators, wounds by *kris*, lances, or fire-arms, and other accidents, are numerous; and tetanus is by no means an unfrequent result, and is generally fatal. The most frequent causes of death among the natives, however, are *diarrhœa* and *marasmus*, from disease of the organic viscera.

Among the European residents, fever occupies the largest proportion both of sickliness and of mortality, forming alone one-third of the whole mortality. The most frequent form is that which has been emphatically named *Pinang fever*, and which is a remittent, with much gastric and cerebral disorder, peculiarly distinguished for a long time by its invariable fatality; in short, in all respects similar to the jungle or hill fever of the East Indies. This disease is most common in the months of April, May, June, July, and August; and it terminates in general on the fourth day, or between the sixth and seventh days. This disease, nevertheless, appears to be much less prevalent than usual, since the surface of the island has been put under the process of clearing and cultivation. Cases of the usual severity occur occasionally among men employed in the labour of clearing; and they were frequent and severe after clearing the island in 1801 and 1802; but it does not appear to affect the population generally. The most successful treatment consists in copious depletion at the outset; but no cure, it is said, is effected without the constitutional influence of mercury. We believe that this merely indicates that the cases in which the mercury was employed would have recovered without its use.

Next to fever, the most common complaint among the European inhabitants is dysentery. Diarrhœa, though less common, is nevertheless a frequent cause of death. Chronic thrush has also proved fatal to several persons, exactly as in the West Indies. Ordinary thrush is frequent among infants.

Ulcers, ordinary and phagedenic, are also mentioned as common, both among the natives of Pinang and the Sepoys. Like those of Malacca, they are found chiefly to attack new comers; for instance, troops from Bengal or Madras, among whom they prevailed epidemically for the first few months after their arrival. Between the middle of August 1825, when the 65th Bengal Native Infantry arrived, and 31st December, 241 cases occurred, of whom 9 died. During next year 147 cases occurred, and of these 32 died. It then disappeared altogether; and fever and diarrhœa became the prevailing maladies. The larger proportion of the 25th Madras Native Infantry in like manner landed at Pinang in December 1826, the numerical force of the regiment being 809. During the month of January and early part of February, while the corps was encamped, they enjoyed comparative health. After removing into the lines in February, ulcer appeared, and 24 cases were admitted before the month was out; and for each subsequent month the average number of admissions was 22, many of the worst phagedenic form, amounting during the whole year to 263, of whom 10 died. During 1828, 145 cases were admitted, and 6 died; but the sloughing form disappeared in the early part of the year; and fevers, which had hitherto been scarce, became prevalent. The 35th Madras Native Infantry, 710 strong, arrived at Pinang in the end of March. In April 15 cases of ulcer were admitted; in May 39; in June 34; in July 15; and in August 15; after which the number declined. The total number of cases during the year amounted to 152, of whom 20 died, and 13 had their legs amputated. On the whole, Dr Ward thinks that he is justified in drawing the following inferences regarding the appearance of this disease among troops. 1*st*, It does not manifest itself in the troops of a corps till a month or six weeks after their arrival on the island or the peninsula; 2*d*, It disappears or subsides gradually, in general spontaneously, after about twelve months' seasoning to the climate; and, 3*d*, When it subsides it gives way to fever and diarrhœa, which then become prevailing complaints.

A tract of territory on the Quedau coast, opposite Pinang, occupying about 30 miles of length, and 3 miles inland breadth, was, in the year 1800, ceded to the English by the monarch of Quedau. This tract, which is distinguished by the name of *Province Wellesley*, was, previous to 1822, completely covered with jungle and thinly inhabited. Since that period it has been gradually cleared and colonized, and accommodates now a population of 25,000 souls. Its chief products are rice, pepper, and sugar; and the cultivation of these is daily extending. Though there is some difference in climate from that of the island, the prevailing diseases are very similar; *e. g.* fever, both ague and remittent, diarrhœa, dysentery, and pulmonary affections. From the geographical and physical peculiarities of the place, it may be doubted whether remittent fever will ever be completely eradicated.

In the foregoing sketch it has been our endeavour to concentrate all the material points communicated in the Reports of Dr Ward; and we believe on the whole, that nothing very important to the professional reader has been omitted. We cannot conclude, however, without a word of advice to our colonial friends, who are actuated with the laudable desire of elucidating the medical topography of the regions in which, by their professional duties, they are placed. In the present reports we recognize, with some disappointment, considerable want of method, some defect of accuracy and originality of observation, and no great attention to sound reasoning in the conclusions deduced. A good deal of the vague and desultory natural history of the report is manifestly copied from very ordinary sources; and we are quite certain that no pains have been taken to verify the facts so copied. The account of the climate and fever of Pinang betrays no ordinary inconsistency; for the former is represented as extremely salubrious; while the Pinang fever, every one knows, is exceedingly dangerous and fatal. Has the climate become truly more salubrious of late years, since the parts of the island have been cleared? Why is not this ascertained and stated? To the erroneous nature of the conclusions regarding the connection between the wet season and the prevalence of gangrenous ulcer or hospital gangrene, we have already adverted; and we must suggest to some of our medical friends in the East to resume the investigation of this question. How, we beg to ask, can syphilis be very common in consequence of the very great excess of the male sex above the female in population, (p. 20, Dr Grant.)?

We wish not, however, to be guilty of the sin of ingratitude. Our professional brethren in the East have so long enjoyed very great opportunities without availing themselves to the extent to which they might have done, that now, when they are beginning to communicate some information, we receive it thankfully Even Dr Ward and Dr Grant, therefore, shall not go unthanked. But they and all similar reporters must forgive us for impressing the positive necessity of being much more explicit in their statements,—of verifying every statement by personal observation,—of not touching natural history unless with perfect acquaintance with the objects,—and of not attempting to draw conclusions where these either contradict each other, or are at variance with the facts collected by themselves; that is to say, if they truly and sincerely wish their reports to be useful, and to be quoted and referred to as authorities.

Art. VI.—*A Practical Treatise on the Diseases of the Eye.* By William Mackenzie, Lecturer on the Eye in the University of Glasgow, and one of the Surgeons to the Glasgow Eye Infirmary. London, 1830. 8vo. Pp. 861.

Of this work we cannot pretend to give any formal or detailed account. But it is our duty to inform our surgical readers, and those more immediately interested in the pathology and treatment of ophthalmic diseases of the claims, by reason of which it is entitled to their attention.

The work of Mr Mackenzie constitutes a complete treatise on the diseases of the eye, and its walls and appendages. It consists of nineteen chapters, devoted to the consideration of separate subjects in the following order. I. Diseases of the Orbit; II. Diseases of the Secreting Lacrymal Organs; III. Diseases of the Eyebrow and Eyelashes; IV. Diseases of the *Conjunctiva*; V. Diseases of the Semilunar Membrane and *Caruncula*; VI. Diseases of the Excreting Lacrymal Organs; VII. Diseases of the Muscles of the Eyeball; VIII. Diseases in the Orbital Cellular Membrane; IX. Injuries of the Eyeball; X. *Ophthalmiæ*, or Inflammatory Diseases of the Eye; XI. Consequences of the *Opthalmiæ*; XII. Adaptation of an Artificial Eye; XIII. Partial and General Enlargements of the Eyeball; effusions and tumours within its coats; XIV. Cataract; XV. Artificial Pupil; XVI. Preternatural states of the *Iris* independent of inflammation; XVII. Glaucoma and Cats-eye; XVIII. Various states of Defective Vision, for instance, *myopia*, *presbyopia*, *chroopsia*, or coloured vision, *photopsia*, night-blindness, day-blindness, *hemiopia* and *amblyopia*; and, XIX. *Amaurosis*.

The several divisions of these subjects are considered at sufficient length, and with much minuteness, in separate sections, into which each chapter is subdivided. In the performance of this task, Mr Mackensie not only shows much practical knowledge of eye-diseases, and their treatment, but brings to the elucidation of the different topics a large extent of reading and research The descriptions are mostly formed from personal observation; and the illustrations of etiology and pathology are derived from all the best and most authentic sources. In compiling in this manner, the author manifests considerable judgment as well as knowledge; and adduces whatever facts may tend to throw light on the obscure, and determine the doubtful, points of ophthalmology.

In this manner Mr Mackensie has provided the surgical reader with a large proportion of information, which, if not altogether new, was at least in situations in which it was by no means likely to be very accessible to him. Of this the treatise every where presents examples; but the most remarkable are found in the articles on *myopia*, *presbyopia*, *chroopsia*, (as it ought to have been, not *chrupsia*,) *photopsia*, *nyctalopia*, *hemeralopia*, *hemiopia*, and *amblyopia*. The interesting account of *hemiopia*, indeed, from Dr Wollaston's observations, is well deserving the attention of the ophthalmologist.

Mr Mackenzie, nevertheless, does not confine himself to the mere duty of compilation. With much diligence and personal application, he has investigated most of the diseases of which he treats; and while he always lays before the reader the results of his observation and experience, compared with those of other authors, he has on several occasions given views altogether new. Our limits do not allow us to specify all the instances in which these additions are made to the previous store of information. But we may mention that of *Glaucoma*, the pathology of which the researches of the author have enabled him to new model altogether. In this singular and hitherto incurable disease, Mr Mackenzie finds, in the *1st* place, the choroid coat, and especially that portion in contact with the retina, of a light-brown colour, without any appearance of *pigmentum nigrum*; *2dly*, The vitreous humour fluid, perfectly pellucid, colourless or slightly yellow, and without trace of hyaloid membrane; *3dly*, The lens yellow or amber-coloured, firm, and transparent; and, *4thly*, The *retina* without trace of *limbus luteus*, or central aperture. It becomes an important question to ascertain, if the latter defect be uniform in *glaucoma*, whether it is congenital or acquired; and, if the latter, what are the circumstances which tend to its production.

In his accounts of modes of treatment, Mr Mackenzie has taken singular pains to collect all the best methods, both rational and empirical, and examine impartially their comparative merits. In general his judgment is correct; and the methods which he recommends are in most cases justified by careful experience. Occasionally mistakes are committed; but they are, on the whole, so few, that we regard it as superfluous to take any particular notice of them.

The greatest objection to the work, considered as a guide to students, is its great length and size, chiefly in consequence of the multitude of cases with which the author has thought proper to illustrate his doctrines. These may, in one sense, be necessary in a systematic treatise, such as we must suppose the author intends the present to be; and we do not deny that cases often tend to impress principles which are liable to be forgotten, and to relieve the dulness and monotony of mere didactic instructions. But they occupy so large a proportion of the work, and they tend so much to divide the attention of the reader, that whatever advantage may result from them in the one way, is likely to be lost in the other, by preventing the reader from forming and retaining a short and distinct view of the pathology and treatment of the different forms of disease. Some of these cases even we must be excused for saying might have been dispensed with entirely. Those, for example, of tumours and other diseases of the brain, related under the head of *amaurosis*, and even several of those employed to illustrate disease of the *sella turcica*, seem to be out of place in a treatise on diseases of the eye. It cannot be denied that the former sort of cases produce *amaurosis*; but how many other symptomatic effects do they at the same time produce, of which amaurosis is only one?

We do not wish, however, to be fastidious or censorious. The work of Mr Mackenzie is doubtless one of great labour; and we are inclined to think that the author intended it as a complete body of information on ophthalmic medicine and surgery, as a work, in short, calculated to afford the student information in every difficulty. As such, we have no hesitation in recommending it as one in which he is not likely to be disappointed.

ART. VII.—1. *A Rational Exposition of the Physical Signs of the Diseases of the Lungs and Pleura; illustrating their Pathology, and facilitating their Diagnosis.* By CHARLES J. B. WILLIAMS, M. D. London, 1828. 8vo. pp. 190.

2. *A Treatise on Auscultation, illustrated by Cases and Dissections.* By ROBERT SPITTAL, late Physician's Assistant, and now House Surgeon, Royal Infirmary of Edinburgh, &c. &c. Edinburgh, 1830. 8vo. pp. 280.

THESE works are entitled to attention, as endeavours to render the use of the stethoscope in the diagnosis and treatment of pulmonary disorders more practicable, and at the same time more general. There is nothing in either which is very distinctly entitled to the character of new; but in both the reader finds a tolerably clear exposition of the stethoscopic signs of the different diseases of the chest; and as such, they are contributions not without value to the literature of thoracic disorders.

The work of Dr Williams consists of two parts, the first of a general, the second of a more particular, character.

After some preliminary observations in the first chapter of the former part, on the use of physical signs in general in ascertaining the existence of disease, and especially on sound, the author proceeds forthwith in the second chapter to consider the physical signs of the state and action of the thoracic *viscera*. A first section is then devoted to a short exposition of the operation of percussion, and the indications which it furnishes; and a second to that of auscultation, and the several modifications of disordered respiration, which may in this manner be distinguished. The different forms of *rhonchi*, the auscultation of cough, of the voice, pectoriloquy and expectoration are then considered. A third section on the auscultation of the heart, and the best form of stethoscope for exploring the chest, concludes the chapter.

In the second part, which is at once pathological and semiographical, the author considers shortly the several diseases of the chest, according to the order of the constituent simple tissues, and the rational and stethoscopic signs to which their morbid states respectively give rise. The order which Dr Williams observes may be understood from the following summary. He divides the second part into four chapters, the first of which is devoted to the diseases of the air-tubes, the second to those of the pulmonic tissue, the third to those of the lungs, and the fourth to pulmonary consumption.

Under the first head are considered *bronchitis*, acute and chronic; dilatation of the *bronchi*, pituitary catarrh, dry catarrh, hooping-cough, croup, ulcers and tumours of the *bronchi*, and asthma. The second contains peripneumony, *emphysema*, *œdema*, and pulmonary apoplexy. The third treats of pleurisy, acute, hemorrhagic, and chronic, pleuropneumony, hydrothorax, hæmathorax, and pneumothorax. These topics are discussed shortly, and on the whole clearly, though we cannot perceive much novelty. In treating of pneumothorax alone, and the stethoscopic signs which it furnishes, Dr Williams questions the accuracy of the opinion of Laennec, that the phenomenon of metallic tinkling, is a pathognomic sign of the disease, when dependant on communication with the bronchi; and he adduces, at p. 143, a case observed by himself at the hospital of La Charité, to favour the justice of his views. In this case the tinkling was perfect; yet, though on dissection, the inferior and anterior half of the right side of the chest was filled with air, there was no fluid in the cavity, nor any communication with the bronchial tubes, showing that the presence of liquid effused is not necessary to the production of the sound.

The treatise of Mr Spittal consists of six chapters, in which the author treats successively of the following subjects; the stethoscope; the physical signs observed in the lungs and *pleura* by auscultation; auscultation of the sound action of the heart; of the morbid action; auscultation of the arteries in health and in disease; and the applications of the stethoscope to determine the fact of pregnancy, and the existence of crepitus in fractures. Though in his discussion of these topics there is nothing positively new, Mr Spittal, nevertheless, shows that he has studied the subject of auscultation with much care, and that he is well acquainted with the practical use of the stethoscope. His observations on the action of the heart, and on the mode of exploring it in health and disease, show intimate knowledge of all the recent researches on this subject, and the pains which the author has taken to arrive at accurate and sound conclusions. From several experiments he infers, in opposition to Dr Corrigan, that the want of synchronism in the pulsation of the arteries of the extremities, with the impulse of the heart, does not prove that the latter is not caused by the contraction of the ventricle, and that there is strong evidence in favour of the impulse of the heart indicating the exact moment of the contraction of the ventricle. Mr Spittal also believes in the dilatation of the heart by its own elasticity; and he thinks, therefore, that the second sound produced by the action of the heart arises chiefly by the blood being drawn or attracted by the ventricles, in opposition to Laennec, who ascribes it to contraction of the auricles, and in partial adoption of a hint thrown out by Mr J. W. Turner. His account of the different forms of morbid sound is very distinct and satisfactory.

The latter part of the volume is occupied by a series of 44 cases, with dissections and remarks, illustrative of the different forms of disease of the lungs, heart, and great vessels.

In conclusion, these two works are valuable in exhibiting succinct and clear expositions of the pathology and semiology of the diseases of the chest, and as such they deserve the attention of the medical practitioner.

ART. VIII.—1. *Anatomical Atlas.* By M. J. WEBER, M.D. and Professor at the Royal Prussian University, Foederi Willian at Bonn. London, 1831.

2. *Explanation of the Anatomical Atlas of Dr M. J. Weber.* London, Published by A. Schloss, Foreign Bookseller, Chancery Lane, 1831.

3. *Anatomical Demonstrations, or Colossal Illustrations of Human Anatomy.* By Professor SEERIG. Translated from the German. Part I. Published by A. Schloss, Foreign Bookseller, 44, Southampton Buildings, Chancery Lane, 1831.

THESE engravings present the strongest claims to the attention of the anatomical world. They promise to supply the student at a very moderate rate with copies of all the best engravings which have been published, especially on the Continent, during the last forty years, by the most eminent anatomists. For one peculiarity, indeed, they are particularly distinguished. Instead of representing the objects of so small a size that it becomes impossible either to give just and natural views, or useful information to the student, the most of the objects are represented of the full size of nature, and in many parts of minute anatomy they are magnified many times, in imitation of the originals from which they are copied. In the publication of Professor Seerig, indeed, the figures are fully four times the natural size; and by this contrivance, the minutest and most delicate varieties of structure are distinctly placed under the eye of the observer, and forcibly, nay almost indelibly, impressed on his remembrance.

Of the first work, which, to our knowledge, appears farthest advanced, there are now published two parts.

The first consists of five, or rather of eleven plates. To explain this, we observe that the first two plates, which are preliminary, are full sized views of the human skeleton before and behind; and as no sheet of paper is adequate to so large a surface, each plate is published in four parts, which are to be fitted to each other, and fixed on linen. These two plates will make excellent appendages to dissecting-rooms, anatomical theatres, surgeries, and similar situations, in which it is convenient to have such a large-size representation to appeal to, and perhaps not always expedient or possible to have a skeleton.

Then follows plate first, entitled, *Supplement to Osteology*, in which the structure, figure, and relations of the bones of the head, of several of the vertebræ and of the sacrum, are explained. The second plate consists of two parts, the first containing very good copies of the engravings of Soemmering, of the internal ear and its constituent parts, and the second, views of the larynx and its constituent cartilages, and the structure of the tongue. The third plate gives a back view of the viscera of the chest, in which we observe the lungs and the large vessels, the thoracic duct and *receptaculum chyli*, the *vena azygos*, the great sympathetic, the intercostal arteries and veins, several of the large vessels, and some of the important parts of the diaphragm. The fourth plate, which is devoted to the explanation of the structure of the lungs, gives several very good copies of the beautiful figures of Reisseissen, and is altogether a masterly performance.

The brain and spinal chord, which occupy the fifth plate, are done from Langenbeck. It consists of an uninterrupted view of both parts in connection,—the first with the investments, the second a front view without them, and the third a back view without them. More complete views of the brain are given in the sixth, of the cerebellum in the seventh plate, and of the spinal bulb, and of the nerves of sense in the eighth, which is altogether a very excellent plate for giving distinct views of the more minute parts of neurological anatomy,—for instance, the vidian nerve, *chorda tympani*, the Gasserian, carotic, and ciliary ganglions, &c.

The ninth and tenth plates give a good copy of the views of the nerves of the thorax and abdomen by Walter; and the eleventh shows those of the uterus after Tiedemann.

The remaining four plates are devoted to the arterial system in the following order; the twelfth, the abdominal aorta and its branches; the thirteenth, the arteries of the stomach and liver; the fourteenth, those of the stomach, duodenum, pancreas, and spleen; the fifteenth, the inferior mesenteric arteries; all copied with very great care and success from Tiedemann; and the sixteenth, the mesenteric veins and arteries, partly from Albinus, partly from Caldani, and the thoracic duct apparently original.

These engravings, in short, constitute a valuable store of anatomical knowledge; and wherever anatomical engravings are requisite, we think they may most profitably be perused by the student.

Of the colossal engravings of Professor Seerig, only four are yet published; the first exhibiting the distribution of the trunk, branches, and twigs of the lateral facial nerve; the second, the distribution of the different branches of the fifth or tergeminal facial nerve, the common carotid and internal and external branches, and the cervical ganglions and nerves; the third, the tympanal bones, the semicircular canals and the cochlea; and the fourth, the membranous cochlea and acoustic nerves, the eye, ocular nerves, choroid and vascular arches of the iris.

These engravings are very well calculated by their sise to occupy a place in anatomical theatres, dissecting-rooms, and wherever it is important to have large and distinct representations of minute and delicate parts difficult to dissect, and not easily demonstrated by preparations alone.

We cannot conclude without recommending both works in the strongest manner to all those who are desirous to obtain distinct and accurate notions of the structure of the human body. There is nothing at present equal to them in this country; and the publisher renders an important service to the student, by putting in his power the valuable figures of the foreign anatomists.

ART. IX.—*Illustrations of Mr Samuel Cooper's Surgical Dictionary.* Published Monthly. Containing four Lithographic plates, with Letter-press Descriptions and References to the Text. London. 1830. Parts 1, 2, 3, 4, 5, and 6.

MUCH has been already done to illustrate the pathology of medical diseases by means of engravings of specimens of morbid anatomy; and if it be attended with no other benefit, it at least cannot fail to insure much greater attention to the effects of morbid action, and to the production of organic changes than it was formerly the fashion to give. In medicine, indeed, this passion seems to be carried to its full extent; and it is quite possible, that, by some persons more distinguished for zeal than discretion, it may be carried beyond its just limits. Let us at present remind our medical readers that it is never in the power of the physician to *cure* organic diseases; and when he has recognized their existence, his occupation, so far as cure is the object, is gone. His business in the treatment of diseases is to control, subdue, and extinguish morbid action, and prevent it from proceeding to give rise to organic products; and the great use of the knowledge of morbid structures to him, is to enable him to determine the circumstances which are necessary to their production, and to ascertain if, among the complex, and not unfrequently chaotic, mass of functional disorder and external symptoms, presented by his patients, there be any which indicate the gradual transition from mere morbid action to morbid depositions; and whether he can entertain any reasonable hopes by acting on the former of preventing the latter. Such may be said, divested of all exaggeration, to be the true light in which the physician is to look on pathological anatomy. Let him not be dazzled by a mere name. Morbid anatomy is to him only a doctrine of effects; and unless he can connect these by accurate observation, and acute but just reasoning with their causes, he may quite as well be ignorant of this valuable branch of pathology as acquainted with it, so far as all practical purposes go.

How different is the relation of the surgeon to morbid anatomy? The whole of that knowledge which condemns the physician to inactivity, and whispers to him the painful truth, that his art is no longer useful, only becomes to the surgeon the signal for commencing measures, and undertaking, by mechanical means, what had been impracticable on physiological principles. Where the one ceases to act the other begins; and the facts that are only curious to the physician become useful to the surgeon. A patient is attacked with pain in the side, and difficult breathing, and other symptoms of pleurisy. He is subjected to the usual remedies, blood-letting from the system, cupping, blisters, and the whole train of antiphlogistic remedies; but without eradicating his disease. He cannot breathe; he cannot lie but on one side, which is already œdematous, and unusually prominent. The surgeon is summoned; an incision is made; and a large quantity of sero-purulent fluid is discharged with great relief; and eventually, under proper management and favourable circumstances, with recovery. A case of obstinate constipation, with vomiting, is opposed by all the remedies for iliac passion, yet unsuccessfully. A small tumour is recognized in the groin, or in the bend of the thigh. The usual incisions are made; a portion of bowel is found protruded, is replaced; the vomiting ceases, and the bowels are forthwith obedient to the mildest aperient medicine. A urinary disease is treated by alkalies, opiates, tonics, astringents, acids, and all the usual tribe of remedies denominated lithontroptic. The symptoms are obstinate; a sound is introduced into the bladder; a stone is recognized; the incisions are made, and by the introduction of the forceps the disease is, in the meantime, removed, and the patient is restored to comparative health. Such are a few of the uses to which the surgeon must apply morbid anatomy. Destined in a large proportion of cases to contend against the effects of diseases strictly mechanical, and precluded by the nature of the cases from rendering the mere powers of the system as a physiological machine available, the duty of the surgeon is in most cases quite the counterpart of that of the physician; and instead of thinking by what means any given morbid action is to be controlled and annihilated, he must consider by what means the products of morbid action can be removed from the system, and whether they can with safety be removed.

It is, indeed, true, that the physician is naturally confined, in general, to the diseases of the cavities in which the vital organs are situate, or to those disorders which, though affecting external and accessible parts, depend on the general system; while the surgeon is not only conversant chiefly with local diseases, but has to combat those affecting the external, sensible, and locomotive organs. Yet this very distinction originates in the circumstance that the surgeon cannot, in all cases, with safety, carry his incisions and operating measures into the region of the internal organs. The aneurismal tumour which affects the subclavian or brachial, the common or secondary iliacs, the superficial femoral or popliteal artery, may be cured by a ligature; but when it affects the *innominata*, the arch of the *aorta*, the cœliac or mesentery artery, or the internal carotid within the cranium, what can be done in the way of surgical treatment? The tumour is the same, nevertheless, in both cases.

If, therefore, morbid anatomy be useful to the physician, it is infinitely more so to the surgeon. If the physician ought to know the morbid changes to which different textures are liable, in order to prevent their formation, this knowledge is infinitely more necessary to the surgeon, in order to enable him to decide on their removal. There is further another reason for the study of morbid anatomy being necessary to the surgeon. Of two or more forms of local disease very similar in external appearance and character, it may happen that one only is malignant, and cannot, with safety to the patient, be suffered to remain; or it may happen that of two or more such forms of disease, one is removable by very ordinary applications, and the other requires the knife. In all cases it is of the utmost importance for the surgeon, from his knowledge of morbid structure, to be able to predict, while any given local disease is still capable of removal with facility, and without the chance of rousing latent malignant action, the course which it is likely to follow, and which it must follow, if allowed to remain sufficiently long.

These several objects, the series of engravings of which the first six numbers are now before us, are well calculated to accomplish. They are made to illustrate the work, which perhaps contains the largest proportion of information on the past and present state of surgery extant, and the one in most general use. But it is of little consequence whether they are made to illustrate any particular work or not. The specimens which we have seen must be useful to the surgical reader, simply viewed as delineations of examples of disease. They are done in lithograph; and though they are destitute of the delicacy and sharpness of the copper-plate, they are really very successful as figures and pictorial objects.

They are not published in any order hitherto, but they contain the following subjects; hernia, dislocation of the knee-joint, anchylosis of the elbow, knee, and hip-joint, fractures of the cranium, *fungus hæmatodes*, various dislocations and fractures, and elephantiasis.

They certainly deserve the attention and patronage of practical surgeons.

Art. X—*Outlines of Physiology, with an Appendix containing Heads of Lectures on Pathology and Therapeutics.* By William Pulteney Alison, M. D. F. R. S. E. &c. Professor of the Institutes of Medicine in the University of Edinburgh. Blackwood, Edinburgh; and Cadell, London. 1831. Pp. 452, 8vo.

THIS is the first of two volumes, which, when finished, will form a complete outline of the course of lectures delivered in the University of Edinburgh by the present professor of the Institutes of Medicine. The author's chief purpose in publishing it is to facilitate the studies of his pupils. But, considered either as the production of one of the most eminent physicians and popular teachers in the northern part of this kingdom, or as illustrating the system of instruction at present pursued throughout the several departments of medicine in our university,—Dr Alison's work will be taken up with interest by many besides those for whose use it is principally intended. And we are sure there is no one acquainted with the details of physiology and the principles and practice of teaching, who can rise from a perusal of it, without being satisfied that it possesses in an eminent degree the qualities by which a summary of physiology, for the use of students, ought to be characterized.

The following is a succinct sketch of the plan and arrangement which the author has followed.

After a few preliminary observations on the Vital Principle and its phenomena, which he considers as consisting of vital contractions, vital affinities, and nervous actions, he proceeds to treat of the Laws of Vital Contractions, then of the movements of the Fluids as resulting chiefly from these contractions, then of the different textures to the formation of which the movements of the fluids are chiefly directed. He next discusses the subject of the animal functions generally, and follows up this general view by a detailed investigation of the functions of respiration, animal heat, digestion, the external senses, the mental faculties, and voluntary and instinctive motion,—adding also some supplementary observations on the physical effects of motions and sensations, and on sleep. The treatise is then concluded with an exposition of the function of generation, and of the peculiarities impressed on the body by age, sex, and temperament. In an appendix he has also printed the heads of his Lectures on Pathology and Therapeutics; But this appendix he has promised subsequently to expand into a treatise upon the same plan with the present Outlines of Physiology.

It would be inconsistent with the objects of this Journal, and the practice to which we have endeavoured to adhere in noticing treatises like that of Dr Alison, were we to attempt to follow the author throughout the details of his work, with the view of giving a bibliographical sketch of it. We shall simply observe that we have nowhere seen the principles of modern physiology more perspicuously and candidly stated. The student, as well as the more advanced reader, cannot fail to be carried along by the closeness and continuity of the narrative, and the clearness and accuracy of the author's expression. But the most distinguishing character of the work is the felicity with which the leading facts and conclusions of rival and often dissentient experimentalists are appreciated and combined into consistent general doctrines. The author in his writings and lectures has always displayed this talent in an eminent degree,—a talent among the most important which a professor can possess; and in his Outlines of Physiology he has applied it with singular success. The chapter, for example, on the physiology of respiration, or that on the functions of the nervous system, contains an abstract of the exact amount of our knowledge on these intricate subjects, which for precision, comprehensiveness, accuracy, and impartiality of judgment, is unrivalled by any exposition we have seen in modern works on physiology.

PART III.

MEDICAL INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

On the Developement of the Vascular System in the Fœtus of Vertebrated Animals. By Allen Thomson, M. D. (The Edinburgh New Philosophical Journal for October 1830, *and January* 1831.)—On this mysterious and important process Dr Allen Thomson has made a valuable series of observations and experiments. The details of these are necessarily lengthened and minute. But we shall attempt to give a short view of them, and especially of the results at which the ingenious author has arrived.

From the facility with which observations may be made on the egg during the process of incubation, physiologists have almost exclusively confined themselves to observe the developement of the parts of the chick *in ovo*; and the facts thus collected have been by analogy presumed to be true in regard to the fœtus of the mammiferous animals, and of the vertebrated classes generally.. It is remarkable, that, notwithstanding the danger of mere analogical inference regarding living bodies, and notwithstanding the cautions with which it ought to be applied, no very serious objection has yet been proved to exist in this instance of its use, and all the observations hitherto made on the chick are found to hold so truly of the viviparous class as to facilitate very much the study of organic developement in them.

According to the observations, especially of Wolff, verified by Pander, Meckel, Oken, Blumenbach, Baer, Rathke, Cuvier, and some others, it results that the part of the *ovum* in which the rudiments or elements of the fœtus are to appear consists of a thin layer of granular substance situate on the surface of the *vitellus* or yolk. This granular substance, which has been from this function denominated the *germinal membrane (Blastoderma,)* in the impregnated egg, becomes eventually more distinct, and gradually separates into three layers, a *serous*, *vascular*, and *mucous*. The first of these, which is the most exterior, is situate immediately beneath the membrane of the yolk, and by the changes which it undergoes in the progress of evolution, it constitutes the rudiment or basis of the brain and spinal chord, the walls of the large cavities, the muscular and osseous systems, and the integuments of the fœtus, and even its proper investment or amnios. The next layer is the *vascular*; and in this the parts of the vascular system appear to be developed. The third, or *mucous* layer, which is placed immediately on the surface of the yolk, is in general intimately connected with the vascular or middle layer; and to the changes which these two layers undergo, the intestinal, respiratory, and glandular systems, owe their origin. To know the progress, therefore, of fœtal developement, it is essential to have a distinct idea of the progress of that of the vascular layer.

The first change which the germinal membrane undergoes after impregnation is the formation of a small dark line on the upper part of the *cicatricula* near the centre of the transparent *area*, and which indicates the site and formation of the spinal canal. As incubation proceeds, this area becomes larger, more pellucid, and defined; the separate existence of the serous and mucous layers is manifest towards the 12th or 14th hour; and the dark streak is broken into transverse portions which indicate the site of the dorsal vertebræ. About the 25th hour the layers of the germinal membrane, which cover nearly one-third of the circumference of the yolk, no longer retain their flat and uniform position, but exhibit various folds which afterwards contribute to form the cavities. As these folds increase they gradually turn in below the fœtus at its head and tail, and their margins approach each other below the abdomen, which at this period lies next the substance of the yolk. The layers of the germinal membrane being bent down in a similar manner towards the sides, there is formed under each end of the embryo a shut sac communicating with the yolk by an aperture common to both. These sacs constitute the rudiment of the intestinal tube; the anterior corresponds to the œsophageal part of the intestine, and the posterior to the anal end.

The rudiments of the heart appear about the 27th hour at the lower side of this œsophageal part of the canal, and are formed by the vascular layer being moulded into a sort of dilated tube in the space between the mucous and serous layer. This applies chiefly to fowls at the 35th hour; for in the Mammalia the first appearance of the heart has not been examined. Blood at the same time is formed; but motion does not commence till the 38th or 40th hour; after which a slow and regular contraction begins to take place in the posterior end of the tube, and gradually extends to its anterior. Part of the wall of the tube then becomes constricted, indicating the separation of the auricle and bulb of the aorta from the ventricle. The tube is incurvated, and its two extremities are brought together, making the auricle and aortic bulb approach each other; and hitherto the heart contains only one cavity or chamber. Its subdivision into several begins to take place in the following order.

1. In fishes and the ranine reptiles the shape is completely moulded; the ventricle becomes thick and muscular; the auricle is dilated, and valves are formed near the apertures. The heart, however, remains simple and undivided in chambers, and the ingredient blood is propelled through a single vessel. 2. In the saurial, ophidial, and cheloniad reptiles, while the same or analogous changes take place in the general structure of the heart, in the strength and thickness of its walls, or in the relative position of its parts, the cavities of this organ became more or less completely divided, so as to separate the blood passing through into more than one stream. The manner of this partition is effected by the formation of a *septum* in the auricle, advancing from above downwards, and in the ventricle ascending from the *apex* towards the base of the organ. 3. In the Birds and Mammalia the heart undergoes the same subdivision; and, during the formation of the partition, the right and left chambers, for some period of fœtal life, communicate with each other. Finally, however, in these two classes the partitions, separating the right and left chambers of the auricles and ventricles, are completed; and no communication is left. 4. In the Mammalia, the growth of the *septum* within the ventricle is accompanied by the formation of a notch or constriction on the outside, by which the apex of the heart is rendered for some time bifid. At the same time, in the higher reptiles, as in birds and mammalia, the bulb of the aorta is also divided, so as to enable each of the ventricles to communicate with those vessels only into which they propel blood during the subsequent course of life.

The formation of the arteries is a complicated process. In all vertebrated animals the anterior part of the intestinal tube is encompassed by four or five pairs of arterial vessels formed by the subdivision of the ascending aorta, which, passing round the *œsophagus*, unite again with each other above the tube, and below the vertebral column, to form the dorsal or thoracic aorta. Among Fishes, in the Cartilaginous division, all the branchial branches of the aorta remain permanent to form gills, in which they are minutely subdivided, forming arteries and veins; but in the Osseous division of five pairs of branchial arches observed in the fœtus, four remain to form gills. In reptiles two branchial arteries only in general are left. In Birds the second pair of arches, and the fifth of the right, are obliterated without giving rise to any other branches. The first and third form the *arteriæ innominatæ* or carotid and subclavian arteries on both sides, the communicating branches between these arches and the roots of the aorta being obliterated at an early period. The fourth arch on the right side alone remains pervious during life, and forms the trunk of the aorta from which the *innominatæ* arose. The fourth arch on the left, and the fifth on the right, united in a common root, give rise to the pulmonary arteries; and as they remain pervious till birth, they form the *ductus Botalli* or *ductus arteriosi*, leading from the right ventricle into the aorta. In the Mammalia nearly the same changes take place in the transformation of the anterior arches; but the aorta is then formed by the fourth arch on the left side, and hence this vessel is found on the left of the œsophagus. The fourth arch on the right, and fifth on the left, appear to give rise to the pulmonary arteries. In the Mammalia the *ductus Botalli* is formed not as in birds or lizards, by the persistence of the posterior part of the pulmonary arches, but by a communication left in the aortic bulb between the roots of the pulmonic and systematic trunks.

We have given the foregoing account of a paper very difficult to abridge; and of which our limits do not permit us to give more ample details. But we cannot conclude this notice without saying, that the manner in which Dr Allen Thomson has conducted his inquiries is highly creditable to his talent for minute observation and accurate research. The whole paper merits the attentive perusal of the physiological reader.

On the Endosmose and Exosmose of Gases, and the application of these phenomena to explain the phenomena of Respiration. (*The American Journal of the Medical Sciences, November* 1830.)—The ingenious and well-known experiments of Dutrochet on the endosmose and exosmose of fluids, of which we have given a full account in a former number of this Journal, have been extended in the work here quoted to the gases by an American physician, Dr Edwin Faust of Columbia, South Carolina. A few experiments on the subject had been previously made by Mr Graham of Glasgow, who found that a bladder, loosely filled with coal-gas, when placed in a receiver containing carbonic acid, was fully dilated in twelve hours, by the entrance of the latter gas, while a little coal-gas exuded; and that, when the bladder contained common air instead of coal-gas, similar phenomena were produced. Dr Faust has repeated and extended these experiments, and has applied the results with considerable success to explain some of the phenomena of the function of respiration.

He first found, that, when a membranous bag, such as a bladder, or the crop of the domestic fowl was moderately distended with azote, and immersed in a vessel of hydrogen, considerable increase of distension took place in twenty hours, although the temperature had fallen six degrees; that when a membrane partly filled with air, was placed in carbonic acid, it became fully dilated in half an hour, and in eight hours had burst; that when hydrogen was substituted for common air in the membrane, the expansion was visible in a few minutes, and rupture took place in two hours; and that the converse of these phenomena took place when the position of the two gases was interchanged. On then performing a more careful experiment with a funnel, having its wide mouth covered with a membrane, and its small extremity so fitted to a receiver as to collect any gas which might escape, he found, that, when two ounces of azote were put into the cavity of the funnel, and the apparatus immersed for twelve hours in oxygen gas, the volume of the gas within the funnel was expanded to half a drachm, and analysis showed that a drachm and a half of oxygen had entered through the membrane, so that a drachm of nitrogen had also escaped.

These experiments show that the gases, like liquids, pass mutually from one to the other through membranes of considerable thickness, and in some instances with great rapidity. This transmission is much more rapid than is produced by mere pressure; for Dr Faust found that when air contained in a bladder was subjected to a pressure of three inches of water, its escape through the bladder placed in common air was a great deal slower than in the slowest instance of exosmose observed when the external and internal gases were different, and both free from pressure. In order to apply these facts to the physiology of respiration we have further to recal the experiments of Mr Ellis on the phenomena which take place when a bladder filled with venous blood is placed in a vessel of common air. The blood becomes scarlet on its surface, and carbonic acid is found abundantly in the air by any of its ordinary tests such as limewater. Dr Faust does not appear to have been aware that this experiment had been previously performed by Mr Ellis; but on trying it arrives at the same results, even when so thick a membrane was used as an ox's bladder. The author's applications of his experimental researches are thus neatly developed in his paper.

It appears from the experiments related above, "that when carbonic acid is separated from common air, oxygen, or nitrogen, by a membrane, the acid passes into the air. This corresponds perfectly with the function of respiration, in which the blood being on one side of the membrane, and air on the other, carbonic acid passes into the air. There is no power we think but exosmose which can produce this effect; for though gaseous fluids do, under the influence of pressure, very slowly escape from membranes, yet it is plain at the first glance, that when a gas has, like the carbonic acid of the blood, lost its elasticity by becoming liquid, it has no longer this power. It also appears, not only that no known vital power can produce the phenomena, but likewise that they occur in dead membranes, and therefore removed from the influence of vitality. We are hence forced to examine the laws of inanimate nature for a clue to this secret; and we find it fully revealed in our experiments."

"In conformity with the existence of a double current we might expect a tendency in both the oxygen and nitrogen of the atmosphere to enter the blood. Accordingly, both of these gases do often, if not always, enter the circulation"—as is shown by the experimental inquiries of Dr Edwards. "It is easy to see what circumstances limit the introduction of these gases into the blood. As there is no room in the pulmonary capillaries for gaseous matter, the oxygen and nitrogen will assume the liquid form in entering the circulation; and no more can enter than the blood can chemically unite with. Hence if the blood contains oxygen enough for the purposes of the system, the carbonic acid evolved will compensate for the oxygen consumed; while, if the circulating mass be deficient in that principle,—the considerable quantity absorbed by endosmose will not be compensated for by the exosmose of carbonic acid, but a portion of oxygen will be spent on the tissues and secretions. All this is in exact conformity with the facts" established by Edwards and other experimentalists as to the relation subsisting between the oxygen which disappears, and the carbonic acid which is formed in the respiration of animals; and these facts "can be explained so as to reconcile conflicting authorities, on no other principles than those of endosmose and exosmose. In like manner, if the blood be exactly saturated with nitrogen, so that it can contain no more in a liquid state, it will be impossible for any atmospheric nitrogen to enter the circulation; while if any of the proximate principles of the blood be deficient in nitrogen, the atmosphere will lose a portion of that substance." In like manner there may be actually evolution, instead of absorption of nitrogen. "When oxygen and nitrogen are separated by a membrane, both endosmose and exosmose occur; oxygen passing into the nitrogen, and nitrogen into the oxygen. Hence in respiration, as the oxygen of the air is on the outside of the membrane and blood on the inside, if that blood has been supplied by the function of digestion with more nitrogen than the system needs, nitrogen will be evolved, and the respired air will receive an addition of that gas. There is no difficulty, then, in explaining, why nitrogen is sometimes absorbed, at other times exhaled, and why in some cases neither change occurs."

On the whole, we cannot help thinking, that the author, Dr Faust, has been extremely happy in these applications of his experiments, and that he has succeeded in filling up an important blank in our knowledge of the phenomena of respiration. The extreme thinness of the membrane of the pulmonary air-cells, the vast extent of surface which they exposed, and the constant agitation and renewal of the air in them, will account for endosmose and exosmose taking place with a celerity which, in experiments on dead animal membranes, it is not surprising that we cannot imitate.

The experiments of Dr Faust have been also performed in a modified form, and apparently without any knowledge of that gentleman's researches, by Mr Mitchell, Lecturer on Medical Chemistry in Philadelphia. We cannot afford space for a detailed notice of his results, which are extremely interesting, and agree entirely with those obtained by the preceding author, but which extend too much into the domain of physics to justify us in describing them fully in this Journal. The most important facts he has observed are the following:—The gases differ prodigiously in their tendency to pass through membranes to one another. But when comparative trials were made by a particular apparatus, in which the volume of extraneous gas, which passed in a given time through a thin membranous partition of caoutchouc into a cavity filled with atmospheric air, could be accurately measured, he found that the time occupied by a certain volume of the different gases was, for ammonia, 1 minute, sulphuretted-hydrogen 2½, cyanogen 3¼, carbonic acid 5½, nitrous oxide 6½, arseniuretted-hydrogen 27½, olefiant gas 28, hydrogen 37½, oxygen 113, carbonic oxide 160, nitrogen about 195.—The penetration of the membrane by the gases takes place with great force: When a syphon with a very long and a very short limb had its shorter limb filled with air, and covered with caoutchouc, and its longer limb filled with 63 inches of mercury, causing consequently a pressure of two atmospheres, and the membrane was then exposed to any of the penetrating gases, penetration took place with a force sufficient to raise the column of mercury, and with a rapidity little inferior to that remarked when there was no pressure for it to overcome.—*Mutual* transmission of the gases through a membrane into one another is not a necessary circumstance in the phenomena in question: If a quickly penetrating gas be on one side, and a slowly penetrating gas on the other side of a membrane, the former passes through before an appreciable quantity of the latter effects its passage. Thus, when a bottle filled with hydrogen, and covered with a thin layer of caoutchouc, was covered by a bell-jar of common air, the external aeriform fluid was, in no long time, found to be an explosive mixture, while the membrane was deeply depressed, and the gas within the bottle was pure hydrogen, with scarcely an appreciable portion of common air. If common air, contained in a bottle, covered by a membrane, be inverted in water, in the course of a fortnight nothing will remain within the bottle but nitrogen.

SURGERY.

Operation of Lithotomy by a native Doctor of Hindostan. (*Transac-*

tions of the Medical and Physical Society of Calcutta; Vol. iv.) A short but interesting narrative is given in this work by Mr Lindsay, of an operation for the extraction of a urinary calculus, the performance of which by a native of the Sutheya or surgeon caste, he witnessed in common with a medical friend. The man said he had operated on about 150 cases, and that not more than fifteen or sixteen died. He did not pretend to any thing in the way of operations beyond lithotomy, depressing the cataract, extracting nasal polypi, and treating wounds and sores. His mode of operating was by "cutting on the gripe," and his instruments constituted a genuine *apparatus minor*, for his whole stock consisted of an old lancet, a small folding knife, and a piece of unpolished iron about the size of a common uncut drawing pencil, having one end roughly scoop-shaped. Mr Lindsay having ascertained by interrogating the man that he had really some knowledge of what he was going to attempt, resolved to patronize him by his presence. The patient was a boy seven years old, who had suffered dreadfully for several months, and in whom he himself, as well as his friend, easily detected the stone by examination through the rectum. Luchman Singh, the operator, without any preparation, and even allowing the boy to evacuate his bladder just before he commenced, proceeded in the following manner:—Having gladly availed himself of a double-edged scalpel which was offered him by his European friends instead of his clasp-knife, he placed the boy on his father's knees, brought each hand behind the ham, and directed them to be held firmly by the wrist, and the legs to be separated to a convenient distance. Then kneeling in front, he introduced two fingers of the left hand into the anus, and roughly pressed with the right above the pubes for a few seconds till he made the stone press out the skin to the left of the perineal raphe. He now cut freely down upon the stone, making an incision in the same direction as in the European lateral operation, and proceeded to attempt the removal of the stone with his scoop. With this he failed at first; but on dilating the wound at the recommendation of Mr Lindsay, he at once removed an oval calculus larger than a pigeon's egg, and weighing about half an ounce. The whole operation lasted only two minutes, and would have been over in a single minute had he made the incision large enough at first. The after-treatment consisted in the application of a variety of ointments and poultices, to which the operator attached great importance, but of which the principal recommendation in the narrator's opinion was that they did not contain a single ingredient calculated to do harm. Eight days after the operation the wound looked well, and the urine had begun to flow by the urethra; and three days after that every thing went on favourably.

Cæsarean Operation successfully performed. (*Archives Générales de Médecine, Fevrier* 1831.)—An extract is given in this Journal from a late Thesis of a Parisian graduate, M. Jolly, giving an account of the remarkable success which his father, a surgeon at Chateau-Thierry, has experienced in performing the Cæsarean operation. He has operated six times, five of his patients being country women, and the sixth an inhabitant of the town. In all the labour had lasted at least forty-eight hours before the operation was performed; and the waters had been discharged. In one patient only of the six no fatiguing attempts had been made by midwives or accoucheurs to finish the labour. He always made the incision on the linea alba, between the navel and pubes, and divided the uterus in the same direction, taking care to restore it first to the perpendicular position if it was inclined. There was never any material hemorrhage; no patient, indeed, lost more than two ounces of blood. In dressing the wound he always had recourse to the gastroraphy, which, instead of producing the ill consequences usually ascribed to it, appeared to him always to contribute greatly to the cicatrization of the wound. In two of the six cases no untoward symptom whatever followed the operation, and the cure was perfected before a month expired; in two others a smart degree of inflammation of the abdomen supervened, but was successfully combatted by venesection, baths, and fomentations; and the remaining two died evidently of metroperitonitis, one on the fourth day, the other at a later period, when there appeared every chance of her recovering under the antiphlogistic treatment. Of the six infants four were born alive and survived; but two were dead after the operation was concluded, although they were thought to have been alive before it was performed. In no instance did hernia ensue; but there was always some prominence of the abdomen at the cicatrix, which had diminished from six inches in length to three only.—This is the most favourable statement which has ever appeared on the subject of the Cæsarean operation.

PATHOLOGY AND PRACTICE OF PHYSIC.

On the respective prevalence of Pneumonia at different ages, and in the two sides of the chest. (Archives Générales de Médecine, Janvier 1831.)—M. Lombard has made some investigations into the respective prevalence of pneumonia in the two sides of the chest, and agrees with former observers in the conclusion that the right lung is more frequently affected than the left. Uniting all the cases collected by Chomel, Andral, and himself, he finds, that in 968 patients 195 had the disease in both lungs, 260 in the left lung, and 413 in the right; so that for 455 attacks of inflammation of the left side there are 673 of inflammation in the right. Various explanations have been proposed of this fact. Some have ascribed its occurrence, more especially in young children, to the right being the side on which most individuals lie in bed; though how this circumstance should have the effect of predisposing to pneumonia we confess it is not easy to perceive. Others have ascribed it to the greater muscularity of the right side of the body; but this explanation is evidently inadequate, since M. Lombard clearly establishes that the difference between the two sides in liability to inflammation is at least as great in females as in males, and in young children as in adults. M. Lombard, on the other hand, considers that the explanation ought rather to be sought for in the anatomical structure of the organs; and he thinks that the difference in the size of the arteries sent to each side will account for the fact. "After the pulmonary artery," says he, "has crossed the direction of the aorta, and has reached the level of the second dorsal vertebra, it divides into two branches, of which the right branch is the larger and more directly transverse in its course, so that more blood must pass along it than along the left division in the same interval of time. The functional activity of the right lung is therefore greater than of the left lung; and it is well known that the frequency of inflammation is in the direct ratio of the functional activity of the organ. Such at least is the only plausible hypothesis which can be formed in the present state of science."

Several late authors have thought that pneumonia is more frequent in adults than in the young. But M. Lombard has been led to a different conclusion; which is, that it is most frequent in infancy, and in old age, and least frequent in the prime of life. The data on which he rests this statement are taken from various public hospitals. From the pathological examination of 206 infants between one day and eighteen months old, of 118 children between eighteen months and fourteen years, and of 1284 persons at different ages between fifteen and eighty-three, he infers, that pneumonia forms 3-17ths of all the organic derangements found in infants, who have died during the first eight days,—that in the second week it forms 2-9ths,—in the third week 3-10ths,—between the sixth week and the end of the second month 2-9ths,—between the second and sixth month 1-10th only. In the second year it increases again to 1-3d; from the second to the sixth year it forms between a fourth and a fifth; from the eighth to the eleventh between a fourth and a sixth; from the fourteenth to the nineteenth only 1-37th; from the nineteenth to the twenty-seventh about a ninth. From this period till the age of forty-seven the proportion is only a fifteenth; from this till the age of seventy-five a fourteenth, and above this an eighth.

On the liability of the Monkey Tribe to Tuberculous Diseases.—(*Archives Générales de Médecine, Fevrier* 1831.)—Dr Reynaud of Paris has lately made some pathological investigations into the causes of death in monkeys brought to temperate climates, from which he is led to conclude that, with very few exceptions, they die of phthisis pulmonalis, agreeing exactly in all its characters with the pulmonary consumption of the human subject, and that they present tubercular deposites in great abundance throughout the whole body. He has examined twenty bodies of monkeys which had died in the Menagerie of the *Jardin des Plantes*, and discovered the signs of advanced phthisis in nineteen of them; and in the greater number he also found tubercles in other organs, more particularly in the spleen, liver, kidneys, omentum, tunica vaginalis, and heart. In the spleen they were frequently as large as a nut, and many of them had undergone so much softening as to have given place to regular abscesses. Tubercles were less frequently seen in the mesentery of monkeys than in that of man; and ulceration of the intestines was never observed. The whole course of the monkey's consumption so closely resembles that of the same disease in man, that its progress may even be determined by the same diagnostic means. We shall illustrate these statements by the following singular example. An ape of middle size, about five years old, and eight months in Europe, was exposed frequently to the rigour of the wintry nights of Paris, and in consequence began to cough and grow lean. Its owner then sent it to the menagerie, where M. Reynaud examined it. It constantly sat on its buttocks with the trunk inclined forward, and leaning on its anterior extremities like a person affected with dyspnœa. The breathing was hurried, the cough frequent, the pulse very frequent. On examination with the stethoscope, the respiratory murmur was found to be vesicular, and mingled with much mucous râle on the left side; but on the right side, near the summit, there was cavernous râle and cavernous respiration. Percussion produced a clear sound in the left side, but a dull sound in the right. The animal rapidly became weaker, and in no long time it died. On opening the body there was found in the left cavity of the chest some effusion of blood, and formation of pleuritic lymph, with a few tubercles in the lung, some of which were softened; and in the right side there were numerous tubercles on the pleura, and a great number throughout the whole substance of the lung, with the exception of its apex. One of the inferior lobes adhered to all the surrounding parts, and was converted into a great abscess, from which matter issued like that of chronic abscesses in the human subject. The bronchial glands were enlarged and filled with tubercular matter. The spleen was large and botryoidal, and its substance was studded with tubercles varying in size from that of a grain of wheat to that of a small nut, some of which were completely suppurated. The liver contained a small number of ripe tubercles. So also did each of the kidneys, as well as the tunica vaginalis testis. The omentum was covered with a multitude of small grains, some of them grayish and transparent, others opaque in their centre only, others altogether opaque, and some cartilaginous. There was no ulceration in either the small or the great intestines, and scarcely a trace of tubercular induration of the mesenteric glands.

The author conceives that advantage may be taken of the identity between the pulmonary consumption of the monkey and that of man to institute a set of experiments on the efficacy of remedies for this disease; and we have no doubt that our neighbours will very soon attend to his hint.

Remarkable instance of Hemorrhagic tendency in a family. (*Medizinisch-Chirurgische Zeitung*, 15*th Nov.* 1830.)—Various instances have been published in this Journal, as well as in others, more particularly on the continent, of the hereditary transmission of the *Hemorrhoeal Diathesis* through several individuals in a family. To those previously published, a very complete example has lately been added by Dr Riecken, of the Principality of Birkenfeld in Oldenburg, in a publication, entitled "New Researches relative to the hereditary tendency to fatal hemorrhages."* In this work, of which a full analysis is given in the journal quoted above, some general observations are made upon the etiology of the hemorrhagic tendency, and on the proper mode of counteracting it. But the most interesting part of its contents is a minute history of the family whose melancholy peculiarity of constitution led the author to turn his thoughts to the subject.

The father of the family, Ernest P., was a husbandman and joiner, who had always enjoyed good health, and at the time of the publication of Dr Riecken's work in 1829, was in his eighty-sixth year. His second wife, by whom he had the children to be mentioned presently, was of delicate health. In her thirtieth year she was attacked with rheumatic gout, and, after this ceased, with curvature of the spine, asthmatic complaints, and frequent pain under the breast bone. By-and-bye signs of water in the chest came on, general dropsy followed, and she died of that disease in her sixty-sixth year. Neither the wife nor the husband was ever subject to hemorrhage, or to petechial spots. This couple had twelve children, five sons and seven daughters, of whom four died of small pox, one of eclampsia, and three boys and one girl of hemorrhagy.

William Louis, one of the three boys, enjoyed good health till his fourth year, when he was attacked with bleeding from the left nostril, which continued, with occasional intermissions, for eight days, and was only arrested by stopping up both nostrils firmly with the *Boletus Igniarius* (zündschwamm.) Two days afterwards, he was seized with anxiety and a sense of constriction in the præcordia, attended by swelling and tenderness there, then with cold sweating and deadly paleness, and at length with vomiting of black fluid blood, which repeatedly returned, and proved fatal in the course of a week.—In another of the boys, John Christian William, blue spots, unattended with pain, frequently broke out on the skin between his first and eleventh years, but were not accompanied by hemorrhage. In his tenth year he was attacked with violent rending pain in the extremities, more especially in the limbs, which abated in a month and a half, after a hard tumour formed on the left knee. This tumour had been present for a year and a half, when he was suddenly seized with violent toothache in the foremost grinder of the left side of the lower jaw, and the pain was so excruciating that he consented to the extraction of the tooth. The tooth was quite healthy. A gush of fluid blood immediately took place from the cavity, and nothing could check it. The poor boy gradually became blanched like wax, and expired on the eighth day.—Philip Henry, the third boy, presented the appearance of blue spots on the skin, particularly of the buttocks, even during the first year of his life, yet without any signs of weakness. When a year and a quarter old, he died while vomiting fluid blood, which had begun the day before, without any previous appearance of ill health.—The daughter died four days after birth in consequence of hemorrhage after the division of the frœnum of the tongue.

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* Neue Untersuchungen in Betreff der erblichen Neigung zu tödtlichen Blutungen, hauptsächlich in ätiologischen und therapeutischen Hinsicht, mit besonderer Beziehung auf eine Familie von Blutern, 1829. Frankfurt am M.

The same striking constitutional infirmity likewise appeared among the grandchildren of Ernest P., born of his youngest daughter, Louisa Catharine. This woman, who is still alive, and in the thirty-second year of her age, is short in stature and light haired, has gray eyes, and a delicate, fair complexion. She never had purple spots, or exhibited any tendency to hemorrhage; nay wounds, and even apertures in veins made by the operation of blood-letting, healed in the usual manner. The menses commenced in her thirteenth year, and were usually rather abundant, and of eight days' continuance. She suffered much from toothache and neuralgic affections of the extremities, was indeed seldom altogether free of wandering pains, and in her pregnancies was so much affected by a tendency to plethora that it was frequently necessary to withdraw blood. The blood coagulated more slowly than usual, was very dark, contained much serum, and presented a thin buffy coat. The hemorrhage immediately after delivery, as well as the lochial discharge, was always profuse. Her husband is a stout, healthy man. They have had six children, four boys and two girls, of whom only the eldest girl and youngest boy are now alive. The remaining girl died of convulsions when nine months old, and the three boys of hemorrhage. The surviving girl is very healthy, and never had either blue spots or bleedings.

The four boys were all born easily, and the navel healed up without hemorrhage. They all had a disproportionately large head, with unusually loose sutures, and fontanelles of uncommon size and slowly filled up. Their bodies were delicately and regularly formed, the nails were of the natural appearance, the skin fair and delicate, with the veins shining distinctly through, and the countenance pale, sickly, and bloated. They had all blue eyes, and one of them fair, but the three others black hair. Dentition went on in all in the usual manner. They were very lively, of mild dispositions, and the eldest showed much cleverness. The operation of vaccination, which was performed by incisions, was not followed by any untoward effects. All had from birth a very fetid discharge of a white, flaky, puriform mucus from each ear.

The eldest of these boys manifested a distinct tendency to hemorrhage in the seventh month: Dark, irregular spots appeared on various parts of the skin, varying in size from that of an *achtgroschen* piece to that of half a man's hand, and without any external injury; and these were at first pale red, but as they increased in size rapidly became bluish-black, and then reddish-blue, bluish-green, and dirty yellow as they were disappearing. At times the body was entirely covered with them. They were attended with hardness and swelling, but not with pain. The first attack of hemorrhage occurred in his first year in consequence of his having bitten the tip of his tongue; and it was not arrested till various artificial means had been tried in vain, and nature accomplished it after the child was reduced to the lowest possible state of exhaustion. When he was eighteen months old a second attack took place in the form of epistaxis, which was not checked till he was almost at the point of death; when it ceased under the use of the Acid Elixir of Haller and laudanum, and during the deep sleep which supervened. On his awaking, general convulsions attacked him; then deep sleep returned, and after this he awoke refreshed, and soon recovered. From this period till he was four years and a half old, he had regularly every three months an attack of epistaxis from the left nostril, which continued between four and ten days with occasional intermissions, and was preceded by lancinating headach, sounding in the ears, excitement of the pulse, flushing of the face, and lividity of the lobes of the ears. The blood was dark-red, thin, without tendency to coagulation, and towards the close of the paroxysm pale dirty-red in colour. The hemorrhage never ceased till the child, after repeated fainting-fits, was brought almost to the point of death. In his fourth year he complained much of shifting pains, particularly in the left thigh, which were particularly troublesome before the customary bleedings or on any change of weather, but became much less so on a swelling of the knee-joint making its appearance. This swelling confined him for some time to bed. But it was diminished by proper remedies; upon which a fresh attack of hemorrhage occurred; and after this the pains ceased. The child, however, was pale and exhausted, and in two days he died with all the symptoms of inflammation of the bowels. Sulphate of soda had no effect in checking the hemorrhagies in this case.

In the second boy, the blue spots began to appear fourteen weeks after birth. When ten months old, a furuncle formed in the right arm-pit, which was carefully opened. At first pus alone issued; but afterwards violent hemorrhage ensued, which continued for three days, notwithstanding the constant use of tents and compresses dipped in alum. After the lapse of nearly three-quarters of a year, an almost fatal hemorrhage followed a trifling injury of the frœnum of the lower lip; and this was not checked till on the third day the actual cautery was resorted to. After this, with the exception of the blue spots, the child was healthy, and became plump and strong. But when two years and a half old, plethoric symptoms began to show themselves as in his older brother's case; and he was attacked with pleuro-peripneumony. Dr Riecken avoided all evacuations of blood, and brought him through this illness by other antiphlogistic remedies. Suddenly, however, after a return of fever, copious bleeding took place from both nostrils, for which all the usual means, including Glauber's salt, were in vain put in requisition; and it was not till the child had repeatedly fainted, and was as pale as a corpse, and till the blood had in the end flowed for six hours as pale as bloody serum, that the hemorrhage ceased spontaneously. Half a year afterwards he was attacked by flying pains in the extremities, followed by swelling in the left ankle, and, when this disappeared, by swelling in the left knee. Recovery, however, was gradually so far accomplished, that the child could walk again, when, in an accidental fall, a small wound no bigger than a pin's head was inflicted on the point of the tongue. Profuse hemorrhage commenced, and for five days it continued, although every conceivable remedy was tried, including three applications of the cauterizing iron, till at length the breathing and pulse ceased, the skin became icy cold, the eyes lost their lustre, and death was believed to be at hand. After a time signs of animation appeared; the hemorrhage was found to have ceased, and the child became convalescent. In fourteen days he began to complain of occasional stitches under the ribs of the left side, accompanied with dry cough; and during a fit of coughing, blood began to gush from both nostrils. The blood was fluid, thin, brownish in colour and fetid. It continued to flow in spite of every remedy which could be thought of, and the little patient soon died slightly convulsed.

The third boy, in consequence of the frœnum of the tongue being unskilfully divided, was attacked when three months old with profuse hemorrhage, which lasted for three days, and only yielded after repeated applications of the actual cautery. The blue spots did not begin to show themselves till the sixth month. The plethoric symptoms observed in the two former cases appeared also in the present instance about the thirteenth month, and especially some weeks before his death, which took place after an attack of hemorrhage of two days' continuance, occasioned by an injury of the tip of the tongue with an incisor tooth. On this last occasion repeated cauterization was of no use.

In the youngest boy, who is still alive, a chronic, itchy eruption of the face was added to the discharge from the ear, which he had in common with his brothers. Blue spots began to appear on the skin four months after birth. But subsequently to the administration of ass-colt liver-oil (!) to the mother, both the eruption and the livid spots disappeared. Whenever the mother intermitted the oil, the spots reappeared; and whenever she resumed it, the discharge from the child's ear dried up, the spots ceased to form; nay, on one occasion he sustained a wound of the ring finger with a sharp knife, yet the hemorrhage was not greater than in other children. Subsequently a furuncle on the shoulder was opened, and a second time a wound accidentally inflicted without any particular hemorrhage. The farther history of this case is not given.

Besides the mother of this family Ernest P. had two other daughters, who, together with their families, never suffered from hemorrhage or ecchymosis; but they were very liable to gout, rheumatism, chronic abscesses, and eruptions. Among his ancestors and collaterals there was no one ever liable to hemorrhage; nor can the least relationship be traced between his family and any of the previously ascertained instances of families possessing this constitutional infirmity.

The author in his general remarks seems disposed to ascribe the constitutional hemorrhagic diathesis to a gouty taint; but this is surely an erroneous idea, otherwise it ought to be much more frequently met with. In the present, as in every previously recorded instance, it is very remarkable that the infirmity was confined to the male branches of the family, and that, nevertheless, it was transmitted through the female branch to the males of the next generation.

Case of Apoplexy of the Spinal Chord. (*Archives Générales de Médecine. Janvier* 1831.)—In the Number of this Journal for July last an account was given of that rare disorder, apoplexy of the spinal chord. We are now enabled to add another case of the same nature, which occurred to M. Breschet in the Hotel-Dieu at Paris. It was complicated with inflammation of the kidneys and bladder.

The patient was a locksmith, twenty-nine years of age, and of sound constitution. He was seized suddenly with intense coldness, particularly in the back and loins, succeeded by pain of the belly in the region of the kidneys, and then by retention of urine, constipation and weakness of the right leg. On his admission into the Hotel-Dieu four days afterwards, there was swelling and tenderness of the belly, particularly in the region of the bladder, obstinate constipation, loss of the power of motion alone in the right leg, and of sensation only in the left leg, as well as in that side of the trunk as high as the nipple, a natural state of the pulse, whiteness of the tongue, integrity of the mental faculties. On introducing the catheter, much clear and red urine was discharged. On the sixth day stools were discharged involuntarily. On the seventh there was some fever and headach, and in the evening frequency and fulness of the pulse, with increased pain in the hypogastrium and kidneys, involuntary stools, continued retention of urine and vomiting. Venesection was now resorted to, and followed immediately by leeches on the belly; but during the next two days there was no material change, except that incontinence had succeeded retention of urine, as the man refused to submit to the pain caused by the catheter. On the tenth day two cauteries were applied to the loins, and next day two moxas higher up. On the evening of the eleventh day the urine was bloody, and the pain in the hypogastrium and region of the kidneys was much increased, especially in the right side, where the slightest touch was insupportable. On the twelfth day the symptoms were worse, and the catheter brought away a quantity of fetid urine loaded with pus. No material change took place for seven days afterwards. But on the nineteenth and six following days there was a regular febrile paroxysm except on one day. On the twenty-sixth the palsy began to affect the chest and upper extremities; eschars formed on the sacrum, trochanters, and cauterized parts of the back; and in eight days after that he expired under dyspnœa and great exhaustion.

On examining the spine, the bones were found injected and blackish, and the membranes of the chord were red, especially in the region of the dorsal vertebræ. About the level of the eighth and ninth dorsal vertebræ there was observed a blackish, or slate-coloured appearance, at the anterior and posterior roots of the right dorsal nerves; and on the membranes being removed, this dark tint was found to extend from the inferior to the superior bulb of the chord, and to be more distinct on the right than on the left side, and also in the posterior than in the anterior region. A great number of veins in the neighbourhood were gorged, and the discoloration was traced to blood extravasated into the cineritious substance, and partly also into the white texture of the chord. On cutting the chord transversely, a large drop of blood formed on the surface of every section. The kidneys were twice the natural size, the pelvis and ureter of each dilated, the mucous membrane red, and covered with lymph and ulcerations. The urine contained in the kidneys was purulent, pus could be squeezed from the mammillary protuberances, and the substance of the kidneys was infiltered with the same fluid. The renal veins presented many red spots internally, but did not contain pus. The bladder was thickened, its inner membrane red, with black patches, ulcerations, and softening. The spleen presented several cavities filled with matter.

Case of General Emphysema produced by Combustible Gas, (Archives Générales de Médecine, Janvier 1831.*)*—M. Bally lately presented the following extraordinary case to the Parisian Academy of Medicine. A man, twenty-five years of age, was admitted into the Cochin Hospital at Paris in the fifteenth day of typhoid fever. He complained of violent pain in the left thigh, which, as well as the scrotum, was swelled; and in his delirium he talked of having been bitten in the knee by a dog; but no information to this effect could be procured after a diligent inquiry. He died on the day after admission; and in eight hours, the body was examined.

Blood had issued from the nose, and from the surface of the skin of the thighs and head, where the cuticle had been stripped. The whole body was emphysematous, but especially the left leg. This was twice its natural size, had a brownish-violet colour, and was extensively covered with black and white phlyctænæ; and a reddish serosity, mixed with air-bubbles, issued from the black ones. This limb resounded when struck, and crepitated when handled. The belly was much distended with gases. The face and temples were livid; and when the skin there was divided a great deal of reddish-black blood issued. The brain and lungs did not present any unnatural appearance; the heart was pale and empty; the intestines presented the usual organic derangements observed in typhus, (enlargement, induration, and ulceration of the glands of Peyer and Brunner.) Bubbles of air filled the vessels of the pia mater and left saphena vein. The lymphatic glands of the mesentery were enlarged, and contained a gas which took fire at a candle and exploded. The same phenomenon was witnessed after scarifications of the legs, thighs, and scrotum. A puncture having been made in the belly, the gas which issued took fire also, and formed a flame blue at the base, white at the apex, and which burned for some time. The combustion likewise extended to the edge of the opening made with the trochar; and the edges became black and were consumed, so that the aperture was rendered of twice its previous diameter. The gas contained in the subcutaneous cellular tissue was inflammable, like that in other parts.

M. Bally considers that this evolution of inflammable gas was not a phenomenon which occurred after death only, and puts the question, whether the case throws any light on the spontaneous combustion of the human body?

Case of Acute General Inflammation of the Arteries. (*Journal Universel et Hebdomadaire, No. 32. Avril* 1831.) We do not conceive that the following case will settle the disputed question as to the existence of such a disease as acute arteritis; but it deserves to be made generally known, so that in parallel cases the attention of pathologists may be directed to the state of the arterial system.

A negro, twenty-eight years of age, came under the care of M. Serres on account of a painful swelling of the left testicle, which was subdued by leeches and poultices. Two or three days afterwards he was found to labour under considerable difficulty and frequency of respiration, some expectoration tinged with blood, and great frequency and extreme smallness of the pulse; and on inquiry it appeared he had been delirious the previous evening. The stethoscope indicated feeble and embarrassed respiration, but without determining whether this arose from pneumonia or pleurisy or acute inflammation of tubercles. He passed a restless night, and next morning was worse. His short and laborious breathing appeared to indicate a severe pulmonary disorder; yet auscultation gave merely negative signs. The pulse had become more feeble and retained its frequency. On this, as on the preceding day, the diagnosis being obscure, the physician confined the treatment to low diet and refrigerant drinks. On the third morning the patient was threatened with suffocation. Various sounds, such as sibilant rale and sonorous rale, were heard in the chest, but no crepitating rale, and no bronchial respiration; neither was their any dulness on percussion. The radial artery had ceased to beat. A trial was now made of venesection, and two ounces of blood were with difficulty obtained; but the man expired in twenty minutes, without any other symptom except hurried and difficult breathing, and frequent feeble pulse. The tongue was natural in appearance from first to last.

The body was examined in forty hours, the weather in the interval having been frosty. It was not stiff. There was a good deal of bloody serum in the lungs, and at their summit there was an intense red coloration; but the air penetrated them with facility. They were free of tubercles. The bronchial membrane was red. Each cavity of the heart contained a moderate quantity of blood. The lining membrane of its cavities was of a livid red colour, particularly near the aortic valves; and this colour was also observed in a part of the muscular texture of the parietes. The red discoloration extended into the aorta and pulmonary arteries. In the aorta, as far as its division into the iliac arteries, the colour of the inner coat was carmine-red, its surface not glistening but dull, it could be easily detached from the middle coat, and in this coat arteries were seen injected with scarlet blood. The iliac, femoral, and tibial arteries presented the same colour, but the tint was deeper; the common carotids and subclavians were in the same state; but in none of these vessels had the membrane lost its firmness of texture. The temporal artery was natural. In the inferior vena cava there was also some discoloration, but much more faint. The head was not opened, as the bones were preserved to make a skeleton.

The relator of the case, M. Camus, insists that it is a genuine instance of acute arteritis, and that this is proved by the redness of the inner coat of the arteries existing without blood in them to account for the colour on the principle of imbibition after death,—and by the redness being accompanied by softening of the texture of the inner coat. We doubt, however, whether his reasons are unexceptionable. The arteries may be dyed by fluid blood soon after death, and yet the blood may afterwards all pass in the usual manner from the arteries into the veins; and although the weather was at the time frosty, an interval of forty hours is, we apprehend, sufficient to make the appearance of softening equivocal in its import.

Case of Amaurosis treated with Strychnia, by P. B. Henderson M. D., Pulteneytown, Wick.—The subject of this communication is a married woman, Betty Sutherland, aged 37. Before the complaint reached its height, she was employed every summer at the herring fishery in this place, in packing the fish into barrels, &c. This occupation requires almost constant stooping, and exposes the person to much wet.

The following is the report she gave on 30th November 1830:

She began to feel a weakness of sight about five years since, unattended with pain in the eye-balls. Her sight became gradually more defective, and about two years ago she began to see the appearances of motes flitting before her eyes. A year ago a prickly pain, as from pins, attacked the eye-balls, getting worse at night. This still continues. She sees the day-light, and can walk about without help, and attend tolerably well to her household matters, but has not wrought for a long time at her usual employment. She can read a little with the aid of glasses, if the print is large. On opening a book and looking into it suddenly, she can read the words for a second or two, but they soon appear detached, and she cannot distinguish them any longer. The pupils are dilated and dark—no cloudiness whatever in them. She does not see better in one position of the head than in another.—A small blister was applied to each temple.

December 1st, Removed the blisters, which being placed too low, only a small part was denuded of the skin over the temples.—Strewed one-eighth of a grain of the strychnia on each sore.

2d, Thinks she sees better already. Last night read a verse in the Bible without glasses by fire-light.—Applied one-fourth of a grain to each temple, with a pledget of savine ointment over it.

3d, Pain of eye-balls nearly gone. This morning read some verses, and could have read more, but was afraid to hurt her eyes. Pupils rather smaller.—Applied one-half grain to each temple.

4th, Lower palpebræ swollen and bluish, as if containing water. Some confusion of head.—Applied one-half grain to each temple.

6th, No strychnia applied yesterday or to day. Upper and lower palpebræ swollen and bluish.—Apply fresh blisters to-night.

7th, Half a grain of strychnia strewed on each sore. Eyelids not so swollen. Sight much the same.

8th, Yesterday felt a considerable *drawing* pain in the sore. Was confused, and memory affected for a short time. Thinks her sight much better, though not improving very fast.—Applied one-half grain to each temple and ordered purgative powders.

9th, Pupils nearly of natural size. Feels occasionally slight pain in eyeballs. Sight improving.—Applied one grain to each sore.

10th and 11th, Applied each day one grain to each sore.

14th, Blistered to the temples again.—Applied one and a half grain to each temple.

15th, One and a-half grain to each temple.

16th, Applied two grains to each sore.

17th, Eyelids much swollen, but not painful.—Applied only one grain to each sore.

18th, Swelling of palpebræ nearly gone.

After this date no more strychnia was employed; twenty grains were used altogether. Her bowels were kept freely open, and the sight improved daily, though slowly. On the 30th complained of great sensibility of retina, rendering strong mid-day light painful.

January 10, Reads ordinary print with glasses, and goes about her household work more freely. There is still *a dimness* before her eyes.

February 21, Since this date the sight has continued to improve, and gradually becomes stronger. The effect of the remedy has not, however, been so rapid as might have been expected from the cases already detailed in the Medical Journal. Still much benefit has been received from its use, and it undoubtedly deserves every attention in similar cases. The only striking peculiarity in its effects in this case is the great swelling of the eyelids, which was not observed in any other case with which I am acquainted.

30th March 1831.

THERAPEUTICS.

Observations concerning the Bark of the Root of the Pomegranate-Tree as a Remedy against the Tape-worm. By Richard Pearson, M. D.—In consequence of the strong testimonies recorded by various medical practitioners attached to the East India service in favour of the bark of the root of the pomegranate-tree *(Punica Granatum)* in cases of tape-worm, I was induced about two years ago to prescribe it to several patients who had voided portions of that worm, and who had previously taken the oil of turpentine and other anthelmintics, with little benefit. I prescribed the powder of the dried bark of the root, (as recommended by Mr Breton in the London Medico-Chirurgical Transactions, Vol. xi.) in doses of from ʒss. to ℈ii., to be repeated every hour until it should produce some powerful effect; but to my disappointment, in one case it produced no sensible effect whatever, and in two other cases small portions only of the worm came away after its exhibition. The remedy has proved equally unsuccessful in the hands of my friend and colleague, Dr Eccles, senior physician to the Birmingham General Dispensary. The bark prescribed by both of us was obtained from London by the principal druggist in this town. To account for these failures, I am led to suspect, either that the bark which we used was from the root of a pomegranate-tree of British growth, or that it was some other bark in lieu of the pomegranate-bark. If it were the bark of a pomegranate-tree cultivated in this country, it is easy to account for its want of efficacy; for, to possess its medicinal properties in full perfection, the pomegranate-tree must grow *in a hot and dry climate.* When cultivated in the gardens of our cold and humid climate, it degenerates—it becomes inert. But perhaps the bark prescribed by Dr Eccles and myself was not the genuine drug; for Professor Richard of Paris states, that the bark of the barberry *(Berberis vulgaris)* is sometimes fraudulently substituted in commerce for the pomegranate-bark. Under these circumstances, I would suggest that no pomegranate-bark except that which shall be imported from the East Indies, be offered for sale by the druggists. Mr Breton has shown that this bark loses nothing of its virtues by drying; hence it may be easily sent from India reduced to powder, and put into bottles well corked and sealed. It is much to be wished that some able chemist would undertake an accurate analysis of this bark. At present, we only know that it contains tannin and gallic acid, with some wax; and two sorts of saccharine matter,—one partaking of the nature of sugar, and the other of the nature of mannite, (Mitouart Journ. Pharm. 1824;) but none of these principles—not even tannin and gallic acid—will account for its anthelmintic action, nor for its effect on the cerebral system, when administered in full doses, giving rise to vertigo, fainting, &c. I strongly suspect that the pomegranate-bark contains a proximate principle—probably a peculiar alkaloid—in which its vermifuge power resides.

On the preparation and medicinal use of Lactucarium or Lettuce-Opium. (Transactions of the Medical and Physical Society of Calcutta, Vol. iv.)—Although Lettuce-opium has been long in the hands of the profession, various opinions are still entertained as to its utility, and some practitioners, we are aware, do not believe in its hypnotic or calmative virtues at all. Much of this uncertainty may arise from the difficulty of procuring an article of the same composition and strength so long as different methods are resorted to for preparing it. It is well known to pharmaceutists that the extract of lettuce, prepared, according to the process of the London Pharmacopœia, by inspissation of the expressed juice, is a very inferior article to the inspissated juice, which exudes from incisions of the plant, and which alone is employed for preparing the lettuce-opium of M. Young and Dr Probart. Indeed, in regard to the former article, we are not unwilling to join with the opinion of those who think that lactucarium has no action at all on the animal body. It is different, however, with the lettuce-opium of Young and Probart, to which alone the name of lactucarium ought to be restricted. It is a useful hypnotic, in some respects perhaps superior to opium; but unfortunately it will never come into general use so long as we depend on the present sources of supply, as it is a great deal too expensive.

We are glad to find, however, that our friends in the East Indies have been directing their attention to the subject, and that there seems good reason for hoping that a genuine and active article may be prepared there at a price which will render its employment in medicine more practicable. Dr James Graham of the Bengal service has succeeded in preparing a sample of lettuce-opium, which he found to possess powerful hypnotic virtues in the dose of four, eight, or twelve grains, without any of the disagreeable effects produced by opium in many constitutions. He gives the following account of the mode of manufacturing it, and the probability of procuring a sufficient supply.

"As this place * and its neighbourhood produce the best Malwah opium, which is considered more strongly narcotic than that of Patna, and as the Coss lettuce seems to attain its greatest perfection here, I think it is not unreasonable to suppose that its produce is of good quality. If time and experience prove this to be correct, there will be but little difficulty in procuring any quantity; for already the natives of this place know it by the name of Ballatee Uffeem, (foreign opium,) and would willingly grow the lettuce and collect its juice on reasonable terms. The cultivation of the plant is attended with no difficulty, and resembles that of the poppy, only giving the lettuce sufficient space,—eight or ten inches asunder,—that they may be allowed to grow large, and not forced to run to seed too quickly. * * * The method recommended by the author for collecting the juice is the following. 'Having a cup to contain the juice fixed in a stand about a foot and a-half high, and a couple of knives, one for cutting the stalk of the lettuce, you commence your operations by making a clean oblique division of the stem about an inch and a-half from the top,—when the milky secretion immediately exudes from both extremities, and must be taken up by the knife prepared for that purpose. You thus proceed by repeated divisions of the stalk, until all the juice is collected. The blade of the knife used for collecting the juice should have some elasticity, and be about two inches long and three quarters broad, with a blunt edge; for if sharp there will be collected with the milk a considerable quantity of the substance of the stalk. The cup should have a cross bar, and contain a little water, which will enable the collector more readily to remove the adhesive juice from his knife. * * * The secreted juice is pellucid until brought into contact with the air, when it immediately becomes milky; and if permitted to stand for a short time, it assumes the appearance of a granulated mass, loses its adhesive qualities, and gradually as-

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* The author has unfortunately omitted to mention in any part of his paper where he writes from.

sumes a brownish colour, like that of opium. Lactucarium prepared in this way is pure lettuce-opium. Its quality, however, depends much on the size and quality of the lettuce. If this is either small or of inferior quality—or if the juice is collected from sprouts thrown out by old stems, it will contain a very great quantity of caoutchouc. * * * On trial it will be found, I think, that the mode of collecting the juice just described is preferable to the brush of Dr Young, or the wove cloth, as recommended by Mr Probart: for though these remove the juice perhaps more effectually, they separate its component parts, and it cannot easily be expressed from them again.'"

After a few observations on the mode of drying the juice thus procured and forming it into cakes, Dr Graham proceeds to relate the results of his experience in the medicinal use of it. He says the usual doses of the preparations recognized by the British pharmacopœias are a great deal too small, as they are scarcely equivalent to more than half a grain of his lettuce-opium, the proper dose of which he has found to be four grains at least, and from that to so much as twelve grains. In some instances, however, he has found two grains sufficient. In these doses it produces quiet sleep for several hours, and does not produce disagreeable nervous or stomach symptoms afterwards. In particular, he gives the result of trials with it in two individuals who could not take opium. One of these persons found that opium never produced sleep, in any dose,—nothing more than quiet and a species of wandering, followed next morning by irritation, nausea, and headach; but four grains of lactucarium seldom failed to procure six or seven hours sleep, without any unpleasant symptoms in the morning. The other, from idiosyncrasy of constitution, could not bear opium in any form; but on trying lactucarium, on account of sleepless nights from toothach, he found it a good and speedy soporific, without any of the unpleasant effects of poppy opium.

Dr Graham adds that he has tried its narcotic effects on animals, but could not succeed with his experiments, as they always vomited the drug soon after it was swallowed. He is in error when he states that a proximate principle, like morphia, exists in it. Various chemists have examined lactucarium without finding any active principle. We have analysed the lettuce-opium of Mr Young, but could not separate any bitter principle by the ordinary process for preparing morphia from opium.

Case of the successful treatment of Snake-bite by cupping-glasses. (*Transactions of the Medical and Physical Society of Calcutta*, Vol. iv.)—Mr Clarke, assistant-surgeon in the Bengal service, has related the following instance of the successful application of Dr Barry's treatment against the effects of poisons introduced into an external wound.

A fine healthy youth, fourteen years of age, was bitten at 10 P. M. near the bend of the right arm by a snake, the species of which could not be ascertained. He was immediately conveyed to a set of "Snake-Doctors," who, after practising their quackery for five hours to no purpose, directed him to be taken to a European surgeon. Mr Clarke, who saw him immediately after the native doctors gave him up, found him affected with stupor, insensibility, laborious breathing, extreme feebleness and rapidity of the pulse, great expression of anxiety and distress, constant efforts to expel frothy matter from his throat, and inability to articulate. The wound was situated a little below the bifurcation of the vein at the bend of the arm, extended horizontally half an inch under the skin, and a slight elevation was perceptible over its course, which was paler than the surrounding integuments, so as to present the appearance of a splinter of fir under the skin. The adjacent integuments to the distance of two or three inches were tense and painful. The wound was immediately scarified and a ligature applied above the elbow. At the same time two attempts were made to administer ammonia, but without success, as the muscles of deglutition were thrown into violent convulsive action, producing increased difficulty of breathing. Mr Clarke then resolved to try the effects of cupping-glasses, and immediately applied one in the usual manner. After it had been applied for an hour and a half, with occasional short intervals, a manifest improvement had taken place. This was seven hours after the bite. He was more composed and expectorated less; the pulse was fuller, and the sense of suffocation less urgent. The cupping-glass was now removed, as very little blood had been drawn by it; and ammonia was administered from time to time, but at first with difficulty. In the course of another hour he could stand up, and soon afterwards he was able to walk. Twelve hours after the bite, the bandage having been still kept on the arm, he complained only of drowsiness and difficulty in articulating. In twenty hours the drowsiness continued, the eyes were dull and injected like a person recovering from intoxication, and there was indistinctness of vision. The arm, from which the ligature had been removed a short time before, was painful near the puncture, and on the seat of the ligature. Next day he was quite well, after a long and refreshing sleep.

MEDICAL JURISPRUDENCE AND MEDICAL POLICE.

Poisoning with a Tobacco-clyster. (*Hufeland's Journal der Praktischen Heilkunde, October* 1830).—An interesting case of poisoning with a tobacco-clyster is related by *Dr Grahl* of Hamburg in the journal here quoted. The individual, a female twenty-four years of age, was liable to dyspeptic symptoms and obstinate constipation, on account of which she had been for a few days under the care of the relater, and with considerable advantage. One day the patient's mother proposed that a tobacco-clyster should be administered, which Dr Grahl peremptorily prohibited. Nevertheless, on the following day she took the advice of a female quack of her acquaintance, who recommended a clyster made with an ounce or an ounce and a-half of tobacco, boiled for fifteen minutes in a sufficient quantity of water In two minutes after it was administered, the patient was seized with vomiting, violent convulsions, and stertorous breathing, which gradually became weaker and weaker till she died, three quarters of an hour after the clyster was administered. The following were the appearances remarked in the body, which was examined two days after death:—Great lividity of the back, slight lividity of the abdomen, retraction of its anterior parietes, paleness of the lips, firm closure of the jaws, flexibility of the joints: The omentum very red, without gorging of its veins; the small and great intestines, both outside and inside, gorged with blood and red; and in some parts of the mucous membrane extravasated bloody patches: The other abdominal viscera in a natural state: The great vessels of the abdomen more empty of blood than usual: The stomach natural: The lungs pale red: The heart empty of blood in both sides: The brain quite natural, and without any accumulation of serosity in the ventricles.

On the Grinder's Phthisis, (*North-of-England Medical and Surgical Journal, August and November* 1830.)—It has been long known that of all unhealthy trades, none is equal in its ravages to that of the steel-grinder. The public attention has been for some time strongly attracted to the subject in Sheffield, by the miserable fate of the workmen of that class in the town; and, in consequence, more accurate data have been supplied on the extent of the evil than in regard to any other trade in Britain. The whole information hitherto collected has been thrown by Dr Knight of Sheffield into the form of an Essay, of which we shall here present an analysis.

The articles on which the Sheffield grinders are employed, are forks, awl-blades, fire-irons, razors, scissors, pen-knives, table-knives, large pocket-knives, files, joiners' tools, saws, sickles and scythes. Some of them use dry grind-stones only; others only wet-grind-stones; others sometimes the one, sometimes the other. The total number in Sheffield is about 2500. They usually commence the employment at the age of fourteen, and, at this period, are, for the most part, raw-boned, uncouth, vigorous, hardy lads, apparently without any particular predisposition to pulmonary disorders. When their apprenticeship is concluded, in seven years, they generally proceed to work on their own account; but some are obliged to abandon the trade during their apprenticeship, being unable to stand the bad effects of the dust on the lungs. During the war a considerable number enlisted at an early age; but now, that this outlet no longer exists, they usually stick to their trade throughout life, though well aware of its fatal tendency.

Till the commencement of last century, the grinders were not observed to be an unhealthy set of men; because they worked chiefly in the country, and mostly in large rooms open at the roof; they practised other departments of the cutlery trade at the same time, such as hafting and forging, and were consequently but a short time employed in grinding; and besides, they were often for months together only four or five hours a-day at work, on account of the scarcity of water, which alone was then used for driving the wheels. As trade increased, however, a greater subdivision of labour was introduced, in 1786 the steam-engine was substituted for water-power, and the grinders gradually became confined entirely to this employment, at which they worked eleven hours a-day, in the town, and in small rooms containing eight or ten stones, and frequently so many as sixteen workmen.

The consequences of this change of system on their health have been dreadful. The dry-grinders die between the age of twenty-eight and thirty-two; those who use both dry and wet wheels die at the age forty, or forty-five at the utmost; and even the wet-grinders do not survive the age of fifty if they remain constantly at the trade. In 1822 it was ascertained, that among 2500 grinders of all classes, there were only thirty-five who had attained the age of fifty, and not above double that number who were forty-five; while among eighty adult fork-grinders, who use only dry stones, there was not a single individual thirty-six years old. The singular fact, too, appears to have been established, that the most industrious men were the shortest-lived, while the elderly men had in general led dissipated lives, so that even a combination of intemperance was advantageous, simply because it withdrew the workman in part from his fatal occupation. Some farther statistical facts are supplied on the subject by Dr Knight's experience as a medical officer of the Sheffield Infirmary; and they all tend towards the same conclusion. Among 250 grinders who had been in-patients and out-patients in Dr Knight's department of the service between 1817 and 1830, 154 were received on account of pulmonary complaints; while among 250 persons of all other trades, 56 only had diseases of the respiratory system. Of the 154 cases of pulmonary disease among grinders, 13 died while under treatment in the establishment; while of the 56 pulmonary cases from other trades, one only died; showing not only that in the former pulmonary diseases are more common, but likewise that they are of a worse character. As to the respective ages of the 250 patients of the two classes, it appears that among the grinders 124 were above thirty, in other trades 140; above thirty-five, 83 grinders and 118 general tradesmen; above forty, 40 and 92; above forty-five, 24 and 70; above fifty, 10 and 56; above fifty-five, 4 and 34; above sixty, 1 and 19.

According to Mr Knight, the workmen almost invariably begin to suffer towards the close of their apprenticeship. "Such," says he, "as are predisposed to pulmonary complaints soon begin to experience the injurious effects of grinding; and as at that time of life they are not too old to be put to other trades, they occasionally leave the wheel, and thus preserve both their lives and their health, while their more robust companions are sacrificing both. Grinders who have good constitutions seldom experience much inconvenience till they arrive at about twenty years of age. About that time the symptoms of their peculiar complaint begin to steal upon them; their breathing becomes more than usually embarrassed on slight exertions, particularly on going up stairs; their shoulders are elevated, in order to relieve their constant and increasing dyspnœa; they stoop forward, and appear to breathe most comfortably in the posture in which they are accustomed to sit at their work, namely with their elbows resting on their knees. Their complexions assume a dirty, muddy appearance; their countenance indicates anxiety; they complain of a sense of tightness across the chest; their voice is rough and hoarse; their cough loud, and as if the air were driven through wooden tubes; they occasionally expectorate considerable quantities of dust, sometimes mixed up with mucus; at other times in globular or cylindrical masses enveloped in a thin film of mucus. Hæmoptysis frequently occurs." The expectoration commonly becomes purulent as the disease advances, and is occasionally fetid. Thickening of the larynx or trachea also occurs, with tenderness and cough on pressure. The pulse at first ranging from 80 to 90, subsequently reaches 120. About the age of thirty the dry-grinders are commonly forced to relinquish their employment; and the wet-grinders are compelled to do so likewise about ten years later. By this time the dyspnœa and sense of choking up of the lungs are urgent; the cough is incessant; dropsy is added to the other symptoms in many; the usual symptoms of advanced phthisis appear; and death at last ensues, but not till after many months, or even years of acute suffering. This course is occasionally modified by accidental circumstances, inducing acute bronchitis, pleurisy, and peripneumony; which diseases are always severe, obstinate, and intractable. The acute symptoms of the grinder's phthisis may be frequently subdued by early and proper treatment; and there is no doubt that they may be even effectually dispelled if the individual can quit his unlucky trade. Without this, however, the relief obtained is merely temporary.

The best treatment in the early stage consists in rest, emetics, leeches, antiphlogistic regimen, diaphoretics, mercurial alteratives, and saline aperients. Emetics in particular seem to procure immediate and great relief. In the second stage leeches, cupping, various counter-irritations on the chest and throat, digitalis, colchicum and squills are resorted to sometimes with advantage; and even in this advanced stage complete recovery may be brought about, if the trade is abandoned, as is shown by individuals regaining their health completely, and keeping it on entering the army.

Dr Knight has had no opportunities of making any pathological observations on the state of the respiratory organs after death, as the grinders have had till lately a rooted aversion to morbid inspections. He is inclined, however, to consider the disease as a general bronchitis merely.

Some years ago a great deal of attention was paid by the master cutlers at Sheffield to the mode of preventing the deleterious effects here pointed out; and in consequence various contrivances were suggested for preventing the dust from being diffused through the apartments of the workmen. Every plan, however, has turned out more or less defective, and Dr Knight says that no precautions are now taken. Among the methods devised two deserve mention. In one the wheels were enclosed in boxes, the inside of which was kept moist; a sufficient space was left free over the stone for the men to apply the instrument to be ground, and a set of magnets were placed over the free space to catch the steel dust. This device, however, was found ineffectual, because the steel dust only was caught, which perhaps is not the most detrimental part of it; and the magnets required frequent cleaning, which the workmen could not be trusted to perform.

The other was a simpler and more efficacious method. The wheel being inclosed in a box as above, a wide tube extended from the box to the external air; and it was found that the rotatory motion of the air around the wheel produced a strong current, which carried much of the dust away by the chimney. This current was aided in its operation by a fan placed at the upper orifice of the chimney and moved by the steam-engine. It appears, however, that this ingenious plan does not remove the finer particles of dust, which are probably the most injurious; and the contrivance has consequently been generally abandoned. Dr Knight very properly suggests that by farther improvements, such as the establishment of proper fixed currents in the workshops, and the careful removal of the previous day's dust before the men begin their operations, the plan last mentioned may at length be made so far effectual as greatly to diminish the inconvenience; and that what remains may be counteracted by restricting the period of working. But he complains that after a few years of excitement, the subject no longer seems to interest either the workmen themselves, their masters, or philanthropists at large.

National Vaccine Establishment.—Copy of the last Report from the National Vaccine Establishment, to the Secretary of State for the Home Department. To the Lord Viscount Melbourne, Secretary of State for the Home Department, &c. &c. &c.

MY LORD, *National Vaccine Establishment, 14th March* 1831.

It has required all our industry and zeal to supply the numerous demands which have been made upon us for Vaccine Matter from all quarters of the Empire since our last Report.

We have furnished the means of protection to the Army and Navy, to every county in England and Scotland, to Ireland, to the Colonies, and moreover to several of the capitals of Europe; and nearly 12,000 of the poor of the Metropolis and its immediate neighbourhood have been vaccinated in the course of the last year.

Whilst this affords an undeniable proof of the great diffusion of vaccination, and is a strong argument for the value of this Institution, it diminishes our satisfaction to be obliged to confess, that, if Parliament should determine that enough had now been done to establish the superior merit of vaccination above every other security against the danger of Small Pox, and that it should be left henceforward to the discretion and good sense of the nation to continue the practice from the resources of individuals, such a determination would find the country unprepared and unprovided with the means of defence, and that a great mortality from Small Pox would be an early consequence of the breaking up of this establishment.

It is our constant care to admonish those to whom we send lymph, of the propriety of taking advantage of the opportunity of providing a further supply for themselves. But it would seem, from the incessant applications which continue to be made to us, either that our warnings are not sufficiently attended to, or what we believe to be the fact, from the replies constantly made to us, it is impracticable to keep up a continued supply anywhere but in the capital where numerous appointed vaccinators assist and support each other.

The result of another year's experience is a confirmation of the value of vaccination. We have evidence before us of persons being exposed to the severest trials of its power of protection in the midst of the contagion of the small pox, with impunity; and though some constitutions do admit a secondary disease, yet this is almost always a safe one, though severe in some instances in its first attack, and it is not so common as the chicken pox used to be after small pox given by inoculation.—We have the honour to be, my Lord, your Lordship's obedient servants, (signed) Henry Halford, President of the Royal Coll. of Physicians; Robert Bree, M.D.

Censor; Geo. L. Tuthil, M. D. Censor; Robt. Keate, President of the Royal Coll. of Surgeons; John P. Vincent, Vice President of the Royal Coll. of Surgeons; Clemt. Hue, M. D. Registrar.

Surgeons Hall, Edinburgh, 16th May 1831.—*Since Martinmas* 1830, the following gentlemen have offered themselves as Candidates for the *Diploma* of the *Royal College of Surgeons of Edinburgh*, and after producing satisfactory evidence that they had completed the course of study prescribed by the College, have been admitted to examination, and found fully qualified to practise the arts of *Anatomy, Surgery, and Pharmacy*, and have received Diplomas accordingly.

Of Scotland.
Veitch Sinclair,
James Syme,
David Edward,
Thomas V. Carmichael,
Frederick John Knox,
Thomas Smith Maccall,
Andrew D. Maclagan,
James Eckford,
John Young Myrtle,
Francis M. Maury,
Frederick C. Grant,
William Falconer,
Archibald Dymock,
Samuel Edgar,
James Gordon,
Duncan C. Sinclair,
Alexander Mackintosh,
James Allan,
James Stuart,
John Bookless,
Peter Sproat,
Francis L. Wallace,
Archibald Wilkin,
Joseph Corrie,
William Shaw,
Robert R. Arnott,
Robert Blount,
Robert Christie,
John Tullis,
George Morgan,
James Moyes Deas,
Alexander Russell,
John Imray,
James Mustard,
William Torbet,
Walter Dick,
Robert Nisbet,
James Gibb,
Francis W. Shirriff,
Thomas Howden,
George Grant,
Donald Mackintosh,
Patrick Nicholson,
Thomas Johnstone,
Samuel Shortridge,
John Kennedy,
Alexander C. Kelly,
William Hodge,
John Greig,
Robert Caird,
David M'Laren Stalker,
David Ritchie,
Frederick M'Kellar,
Charles M'Diarmid,
William Dick,
David Dickman,
Alexander M. Gillan,
Robert Elliot,
George Murray,
William Gentle,
John Mason,

From England.
John M. Johnston,
Walter Twynam,
Gustavus W. Blanch,
William Arpthorp,
John Crallan Hislop,
Charles J. Davidson,
Robert Hawdon,
Anthony Davison,
Charles J. Meteyard,
John Macdonald,
George Dunn,

From Wales.
John James Tate,

From Berwick-upon-Tweed.
Alexander A. Carr,
Robert Embleton,
William H. Anderson,

From Ireland.
Uniacke Ronayne,
Robert Mackight,
James J. G. Maccaldin,
David Howe Scott,
Henry Augustus O'Hea,
Joshua T. Hoskins,
Andrew Clark,
David Mitchell,
John Phillips,
Robert Stevenson,
Charles Madden,
Thomas Hogg,
John Harvey,
James Patterson,
Thomas Armstrong,
John Dick,
William Stanton,
James Hamilton,
William M'Cormak,
John A. Sturgeon,

From Abroad.
Harry Tracey,
John Mitchell,
Alexander Campbell,
John Carravanna,
James Hennen,
George Gray,
William J. Irvine,
George Harvey,

Extracted from the Records of the Royal College by
Wm. Scott, *Secretary*.

NOTICES.

Proposed General Scientific Meeting at York.—A strong desire having been expressed that a General Meeting of friends of Science should take place annually in some central town of England, with the view of promoting unrestrained communication of scientific opinions and discoveries, a

Committee of the principal Scientific Societies of London, Edinburgh, &c., have fixed on the City of York as a most desirable place for the first meeting;—to commence on *Monday* the 26th of *September*, a period of the year which has been ascertained to be most convenient for the parties interested, and the Meeting to be continued during as many days as may be deemed expedient.

Any friends of Science in Great Britain or in other parts of Europe, who may wish to attend this Meeting, are requested to send a letter (post paid) to the Secretary of the Yorkshire Philosophical Society, York, in order that adequate preparation and accommodation may be secured. It is proposed that the visitors shall assemble in the Museum and apartments of the Yorkshire Philosophical Society, to receive memoirs and communications, and that they shall dine together daily.

Persons arriving in York on the 26th of September are requested to apply to the Porter of the Museum for information as to the hours and places of Meeting.

Foreigners who may honour this Meeting with their presence will find every accommodation prepared for them.—*London, 25th May* 1831.

Notice to Students of Medicine.—At the Annual Business Meeting of the Harveian Society of Edinburgh, held on the 19th March, it was decided, that the best Essay given in on the subject advertised last year, viz.—" *The proximate Cause, and most appropriate Treatment of Tetanus,*" was the one bearing the following motto,—" Hæc, ut potero explicabo; nec tamen, quasi Pythius Apollo, certa, ut sint et fixa, quæ dixero; sed ut Homunculus unus e multis probabiliora conjecturâ sequens." Cic. *Tusc. Disp.* 1, 1, 9; and on opening the corresponding sealed letter, it was found that Mr John Mitchell, Student of Medicine, was the Author; consequently Mr Mitchell was declared the successful competitor.

The Harveian Society has fixed on the following subject for the prize essay for the year 1832, viz.—" *An Experimental Essay on the Curative Properties of Strychnia.*"

Dissertations on this subject must be transmitted to either of the Secretaries, on or before the 1st day of January 1832. Each dissertation must be accompanied by a sealed letter, containing the name and address of the author, and inscribed on the back with a motto. The same motto must also be prefixed to the dissertation to which the letter belongs.

The prize given by the Society to the successful candidate, is either a copy of the Quarto Edition of Dr Harvey's Works, published by the College of Physicians of London; or a silver medal, with a suitable inscription, at the option of the candidate. The prize is presented to the successful candidate, at the Annual Festival in April.

The candidate is at liberty to employ his dissertation afterwards, in any way he may think proper: And, accordingly, some dissertations, presented to the Harveian Society, have, in consequence of publication, been productive of considerable honour and emolument to the authors. By order of the Society.

William Moncreiff, M. D., 7, York Place, } *Secretaries.*
John Campbell, M. D., 17, Albany Street, }
Edinburgh, 12th April 1831.

BY HIS MAJESTY'S ROYAL

LETTERS PATENT.

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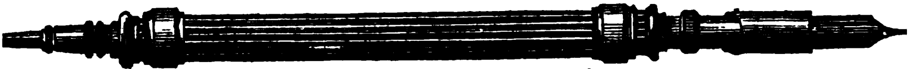

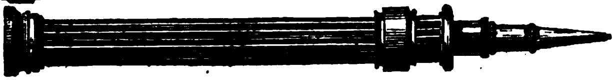

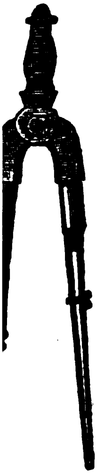

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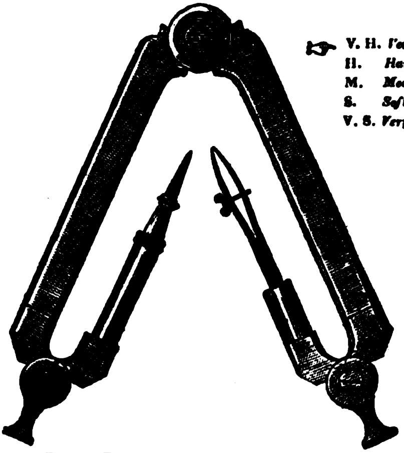

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V. H.	*Very Hard.*
H.	*Hard.*
M.	*Medium.*
S.	*Soft.*
V. S.	*Very Soft.*

S. MORDAN & Co.

spectfully solicit the public attention to the frauds which are daily practised upon them as regards ir Patent Ever-Pointed Pencils, and the leads for refilling the same. The spurious pencils bear appearance of being made of silver, when, in fact, in many instances they are nothing but white al, and the action so bad as to cause great annoyance to those using them. The public are also h imposed upon with the spurious articles sold for leads, being nothing more than antimony and nish dust, which is of no comparative value to the beautiful, and in fact invaluable Cumberland l; also their not being of a size renders them useless. To guard the public against the above ositions, the patentees are induced to make the following remarks:—

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th. The spurious leads have the word "for" or "as," in small characters, before the name S. dan & Co. Attention to this will immediately detect.

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he Portable Pen Boxes also have a yellow belt, bearing S. M. & Co.'s seal. The Pen-holders the London *Hall Mark*, which ensures their being silver. The spurious pen-holders are nothing white metal, which the acid affects, and consequently become a nuisance in use.

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hese pencils contain the same quality of pure Cumberland lead as their silver Ever-Pointed cils. S. M. & Co. have been induced to go extensively into the manufacture of this article, with roved machinery, from the very frequent applications for them from artists, architects, a s, who are desirous of obtaining with certainty the pure Cumberland lead. We onized by his Majesty's Stationery Office, London.

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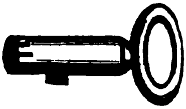

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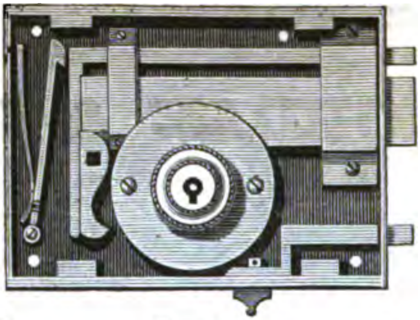

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4. The difficulty of imitating the key, which is so great, that good workmen have failed to make a successful copy when the key has been placed in their hands for the purpose.
5. *The impossibility of taking an impression, which is so easy in every other key, with sealing wa*
6. The importance of every part of the key, which completely excludes those fertile sources o fraud, skeleton or duplicate keys, so easily obtained, and which prevents the imposition too ofte practised, of exhibiting apparent security in the key, but which has no counterpart in the lock.
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For Publishing, by Subscription,

AN ENGLISH TRANSLATION

OF THE

MEDICAL WORKS

OF

PAULUS ÆGINETA,

THE GREEK PHYSICIAN.

ILLUSTRATED WITH A COPIOUS COMMENTARY.

By FRANCIS ADAMS, Surgeon.

The design of this Publication is to exhibit a compendious view of ancient opinions on all the branches of Medicine; namely, Hygiene, Dietetics, the Practice of Physic, Surgery, Toxicology, the Materia Medica, and Pharmacy. With this intention, I have given a literal translation of the celebrated Synopsis of Paulus Ægineta, as being the most complete treatise on the whole Art of Medicine which has come down to us from antiquity; and I have collected under every head, whatever I could find most useful and instructive in the Medical Literature of the Greeks, Romans, and Arabians; to which I have further added, frequent allusions to modern opinions and conclusions, drawn from my own personal observations. The plan herein followed, will be, therefore, found materially different from that pursued in any History of Medicine hitherto presented to the public. By thus bringing into one view, the doctrines and experience of distant ages on a great variety of highly important subjects, I trust that I have not only been able in most instances, to furnish an interesting exposition of the state and progress of professional knowledge during a lapse of more than fifteen centuries, but that I have also occasionally succeeded in rectifying certain erroneous notions which still prevail, and even sometimes in suggesting improvements upon the practice of the present day, by restoring forgotten truths, and reviving the recollection of remedial measures which had formerly been adopted, and have since been abandoned. Such, at least, was my object in entering upon this Work, and that I have not been wholly unsuccessful in attaining this end, I am disposed to flatter myself, from the reception it has met with from certain distinguished Members of the profession, whose favourable opinion of it, I feel myself called upon to mention, as an apology for soliciting the public patronage in the manner I now propose. Considerable portions of the Translation and Commentary were submitted to the examination of Dr. ABERCROMBIE of Edinburgh, and Mr. GUTHRIE of London, and it is from the marked expressions of approbation which they bestowed upon them, and the encouragement which they gave me to proceed with the Work, that I have determined upon attempting the present publication.

The Work will be published by Subscription, in Three octavo volumes, handsomely printed in a small type.

It will come out in three distinct Parts, at intervals of about Four months; *Price* 12*s*. *the Part*.

FR. ADAMS.

BANCHORY-TERNAN, 11*th June*, 1881.

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THE

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MEDICAL AND SURGICAL JOURNAL.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Seventh Report of the Edinburgh Surgical Hospital, from February to August* 1831. By JAMES SYME, Esq. F. R. S. E. &c.

SINCE last Report, 1263 cases have applied at the Hospital for relief. Of these 168 were admitted, and the remainder treated as out-patients. On the 8th of May the institution completed the second year of its existence, and the tabular view of diseases shows what has been done during this period. The following extract from the Second Annual Report to the Contributors, may be interesting to the friends of the Hospital who have not an opportunity of seeing that document.

Receipts.			
Contributions from the public, -	L.203	13	6
Fees from students for attendance, -	54	12	0
Cash from James Syme, Esq. -	380	14	4
Due by treasurers on last account, -	91	5	3
	L.730	5	1
Expenditure.			
Rent, taxes, insurance, and wages, -	L.183	16	5
Maintenance of patients, -	385	14	11
Medicine L.60, and furnishings to the Hospital,	138	15	2
Miscellaneous, - -	21	18	7
	L.730	5	1

Wounds.—Several severe injuries from gunpowder have occurred, of which the most remarkable are the following:—

Mrs Huntley, æt. 37, in endeavouring to light a fire, sprinkled gunpowder over it from a flask which she held in her hand. The powder ignited, and being little short of a pound in quantity, exploded with such force, as to blow out the pannels of the door, and crack the plaster of the walls completely round the ceiling of the room. The only personal injury sustained was a rent in the hand, which nearly separated the thumb, being in the same situation, and of the same extent, as the first incision which is made for amputating it at the carpal articulation. The joint was not only open, but completely divided all round, and the soft parts were very much injured. The portion of integuments that remained was cut through, so as to preserve a pretty good flap for covering the raw surface. The patient recovered without any remarkable occurrence.

John Crosley, aged 30, on the evening of the 27th of May, fired a gun, which burst, and injured his left hand so severely, that he was immediately brought to the Hospital from six miles distance. On his arrival, he was found in a very distressed and agitated state, at the same time suffering from a degree of stupor similar to what is caused by intoxication. The hand was lacerated so extensively, that all the nerves, muscles, tendons, &c. of the palm, were either torn across or detached from each other, no less completely than if they had been dissected; and the bones of the carpus, as well as metacarpus, were reduced to fragments. Since the accident there had been a considerable, but not profuse hemorrhage. As the condition of the limb rendered its preservation plainly impracticable, amputation was performed by double flap, a little above the wrist. The patient's appearance was instantly improved, he became calm, and felt his hand as before the accident, though previously he had no feeling of its existence. He made a good recovery, though of a very robust plethoric habit, and was dismissed a week after the operation, as his affairs at home urgently required his presence.

The most interesting circumstance in this case was the state of the arteries. Two of the largest divisions of the palmar arch were torn through, yet the hemorrhage had not been excessive. The fact that torn arteries bleed little or none has not yet been satisfactorily accounted for. Mr Charles Bell thinks that the loss of vitality consequent upon the severe injury will increase the adhesive attraction between the blood and vessel, so as to promote coagulation. Many people are satisfied with the alleged greater retraction that follows tearing; and others prefer the explanation which attributes the occurrence in question to the internal coats being ruptured more extensively than the external ones, and thrown into folds which obstruct its cavity. The truth seems rather to be, that, when the artery is stretched, the internal and middle coats give way before the tough cellular envelope, which, when it at last yields also, collapses about the others in a conical form. Trials on the dead subject suggested and have repeatedly confirmed this opinion, which agreed with the appearances observed in the hand under consideration, where the orifices of the vessels could not be discovered without difficulty, though they were of a considerable size.

Contusion of Foot.—James Black, aged 14, was admitted on the 1st of July, in consequence of an injury which he had sustained from the wheel of a loaded cart that passed over his foot while he lay asleep on the road a few miles out of town. All the toes were broken, and that next the great one was also dislocated at its metatarsal joint. The integuments of the instep and inner side of the foot were detached from their subjacent connections, and the metatarsal bone of the great toe was denuded throughout almost the whole of its extent.

The dislocated toe was removed, but an attempt to preserve the remainder of the foot seemed warrantable, and the edges of the wound having been brought together, suitable means were employed to oppose excessive action. The case promised well until the 4th, when the toes showed symptoms of mortification, and on the 6th they were so thoroughly deprived of life that there could be no hope of their recovery, and it became a question whether they should be left to slough away, or be removed at once by amputation. The latter alternative was chosen, because it seemed likely to afford both a more speedy and a more perfect cure than the other, by which the extremities of the metatarsal bones could have had no sufficient covering. The operation was performed on the 7th, according to the method of Lisfranc, and the wound healed sooner than might have been expected from the lacerated state of the parts concerned in it. The patient is now able to walk on the stump, which is quite healed, and promises to be ultimately hardly less useful in progressive motion than the entire foot.

In these reports two cases have been related, in which partial amputation of the foot was performed by the operation of Chopart,—no more of the tarsus being left than the *os calcis* and astragalus; and it has been stated, that the tarso-metatarsal amputation is hardly ever admissible, in as much as the disease, viz. caries, for which it is necessary to remove a part of the foot, is almost always either too limited to warrant, or too extensive to admit of a section between the tarsus and metatarsus. It is only in cases of injury from mechanical violence, or cold, where the toes and farther extremities of the metatarsal bones are affected, that this operation can be performed with advantage. In regard to the mode of operating it is right to acknowledge the credit due to M. Lisfranc for ascertaining the means of overcoming the difficulties which are presented by the very irregular surfaces of the different articulations that require to be divided.

Fracture.—Of the numerous cases of fracture which have come under treatment the following may be particularly noticed: Robert Dunn, aged 7, was admitted on the 29th of May, on account of fracture of the thigh, which he had sustained the night before from the wheel of a cart passing over it. It was found on examining the limb that the lower portion of the bone was drawn up before the upper one. The case was treated as usual by means of the long splint, and terminated favourably.

The position of the broken extremities observed in this case is extremely rare. I have met with it once before in a child three years old, where the bone was fractured by direct violence, viz. the blow of a poker. In the museum of the College of Surgeons there are two instances of it, both in adult bones; one of which belongs to the collection of the late Dr Barclay, the other to that of Mr Charles Bell. There can be no doubt that the bone is thrust anteriorly in opposition to the tendency of the muscles, at the time of the injury, and by the same force which occasions it.

Alexander Christie, aged 49, from Leith, was admitted on the 15th April, on account of compound fracture of the leg, caused by falling from a scaffold, fifteen feet high. The wound was small, and seated over the shin, about a third from its upper extremity. The limb was greatly distended, and covered with large vesications, some of which contained dark fluid, others yellow. These vesications result from the direct effect of external injury, and ought not to excite apprehension, except in so far as they show that the limb has been severely bruised. On all occasions, but more especially in compound fracture, they are apt to cause alarm, and mislead to the belief that gangrene has commenced. The patient in question exhibited an exceedingly unhealthy irritable aspect, and, in addition to the fracture, had suffered a concussion of the spine, which for several days gave rise to obstinate constipation and inability of discharging his urine. The prognosis in every point of view was very unpromising, but the recovery went on most favourably, and was completed on the 18th of June. The successful termination of this case is perhaps in no small measure to be ascribed to the constant and careful application of cold wet cloths to the limb so long as there was any fear of inflammatory action.

Andrew Linklater, aged 48, first mate of a ship preparing to sail from Leith to India, fell upon the deck and suffered a compound fracture of the leg rather below its middle. He was admitted into the Hospital on the 14th of March, a fortnight after the accident. There was then, probably, in consequence of his journey from Leith, great displacement of the fractured extremities. The bone having been carefully reduced, the limb was placed on an inclined plane, and the patient felt no more pain. But the union went on very slowly, and it was not until the 20th of May that the uniting medium seemed to be ossified.

This case illustrates the delay of reparation, and danger of causing the formation of a false joint that proceed from allowing fractured bones to be moved after the accident. In the summer of 1829, a French gentleman sustained a simple fracture of both bones of the leg, by falling backwards out of a little Highland cart in going up a steep ascent. The accident happened in a very wild district, and the patient being desirous to reside in Edinburgh during his cure, travelled, during three successive days, nearly 170 miles in carts, coaches, steam-boats, &c. The limb, was set at Oban, and afterwards more methodically at Glasgow, but, notwithstanding every precaution to the contrary, was kept in almost incessant motion so long as he was upon the road. When he arrived here, it appeared to be in a very satisfactory state, there being no inflammation or tension, and no difficulty was experienced, either in replacing or in retaining the extremities of the bone. The patient behaved with the utmost steadiness, and his general health continued perfectly good, yet the cure for many weeks did not seem to advance, and it was not until we almost despaired of its completion, that firmness began to be restored.

It is a most mischievous, though common opinion, that the reparation of fractures is not commenced until a week or two after the accident, and that consequently no harm results from leaving the broken surfaces at liberty during this period.

John Ferrier, aged 28, was admitted on the 22d of July, having his jaw broken by a fragment of stone that was blasted near him. There was a wound of the cheek, and an extensive laceration of the gum showed a very oblique fracture of the base of the bone opposite the grinding teeth. A handkerchief was applied, so as to brace up the jaw firmly, and then the broken surfaces which had previously been displaced laterally to a considerable extent resumed their proper situation. It has been already explained in the fifth of these reports, that the interposition of any foreign substance between the teeth is equally useless and inconvenient.

In the Fourth Report mention is made of John Macdonald, aged 40, who, five years ago, suffered a very bad compound fracture of the thigh at the trochanters. He had a very tedious cure, and afterwards suffered occasionally from the separation of small exfoliations. At the time he first applied at the Surgical Hospital, 29th March 1830, his state was so unpromising that different practitioners had given him up as incurable; but a pretty large piece of bone having been discovered lying loose at the bottom of a sinus, and extracted, he soon got better, and suffered no farther trouble from the limb until the 12th of May 1831, when he felt a severe pain in the thigh, which at the same time began to swell. He was admitted on the 2d of June, and could hardly have been recognized, so much was his appearance altered for the worse. He was thin and anxious-looking; his voice hollow; his eyes dull; his tongue dry; and his stomach so irritable that he rejected nearly all his food; and suffered from frequent hiccup. The thigh was greatly swelled from the knee to the *trochanter major*, and fluctuated distinctly, but was not at all discoloured. By means of a trocar, thirty-one ounces of fluid resembling putrid blood, and having a most insupportable fetor, were drawn off, and two days afterwards, a free incision was made, when twenty ounces more of the same sort of fluid escaped. The limb was carefully bandaged, and the patient had a discretionary allowance of beef-tea, which was the only article of nutriment his stomach could retain. The discharge improved in quality, and diminished in quantity, and hopes began to be entertained that he might still do well. The stomach again, however, became extremely irritable; his tongue was perfectly dry and smooth, as if covered with a cuticle; and his whole appearance so strongly indicated approaching dissolution that it was expected every day. As several days passed without its happening, or any material change taking place, it came to be a question whether or not amputation ought to be performed. To assist in deciding this point, the cavity of the abscess was carefully probed, and the bone was felt to be exposed as high as the trochanter. The operation seemed to promise the smallest possible chance; and its performance in such circumstances was extremely unpleasant, as there was no small probability of the patient's dying on the table. As every one who saw him considered his death as certain, and very near, unless he was relieved from the disease, and thought that amputation afforded some room for hope, it seemed proper to state the matter fully to the friends of the patient, who decided on making the trial.

On the 21st the thigh was amputated by double flap at the trochanter; but as it then appeared that the same diseased state of the bone which existed lower, extended still farther up, it became necessary to remove the remaining portion of the femur from the acetabulum. This was done without any farther external incision, or the ligature of any more vessels, and the wound was then dressed as usual. The patient took soup and cordials frequently during the day, but sunk towards the evening, and died seven hours after the operation. The bone when examined showed no trace of periosteum over a large extent of its surface, farther than a thin layer of gelatinous substance, similar to recently effused coagulable lymph.

Osteo-Sarcoma.—This expression is usually employed to denote two very different morbid growths connected with the osseous tissue. One of these is similar in all respects to the medullary sarcoma of the soft texture, and constitutes a truly malignant disease. It occupies various situations in respect to the bone; being sometimes between its external surface and the periosteum; sometimes in the medullary canal; sometimes takes the place of the bone itself; and not unfrequently expands the osseous substance into shells, plates, or spicula, which contain it within their cavities or interstices. The superjacent integuments become discoloured, and their veins enlarge. Its disposition is always the same, and this is to inflame, suppurate, and fungate, the excresence sometimes bleeding, sometimes not, but constantly affording a profuse discharge. Any operation, short of entire removal, cannot be performed with safety on such growths, as the irritation of it hurries on the morbid action in the portion that remains. The other kind of tumour comprehended under the designation of osteo-sarcoma possesses the consistence and appearance of fibro-cartilage. It is contained in a capsule which, when deprived of its coverings, has a glistening appearance. Like the medullary sarcoma, it is variously situated in regard to the bone, which is expanded into a shell, produced into radiating plates, or removed by absorption, accordingly as the growth occurs internally, externally, or in its substance. The bone, though thus altered in shape, seems to remain perfectly sound in its texture; and there is reason to believe would resume its natural form if freed from the morbid growth. The integuments are not altered; and no inconvenience is experienced from the disease, except what is occasioned by its bulk. The mass may be treated with great freedom; and when a portion merely of it is cut away, the remaining surface heals as if perfectly sound; but the part that has been left continues to grow, and soon restores the swelling to its former size. There is no remedy for these growths, except removal of the bone in which they are seated;

and the result of such operations is very satisfactory, since the disease rarely recurs.

Charles Farmer, aged 24, from the east of Fife, entered the Hospital on the 28th of January, on account of a swelling of the left leg. The enlargement occupied the region of the upper third of the tibia, together with the space between it and the fibula, both before and behind. The swelling rendered the limb about a half larger than usual; it was unequal as to surface and consistence, being in some parts almost fluctuating, and in others nearly as hard as bone; and was covered by dark-coloured integuments, the veins of which were much enlarged. The patient complained of constant pain in the limb, which was particularly distressing at night. He observed the leg to be swelled and painful about eleven months previous to admission; and since then these symptoms had progressively increased.

As there could be no doubt as to the necessity of amputation, the operation was proposed to the patient, and performed so soon as his consent was obtained, on the 14th February. He made a good recovery, and continues well.

The diseased structure was found on dissection to bear the most exact resemblance to that of the man Linklater, whose case has been related in the fifth report. The tumour originated in the central part of the tibia, and having made a way out by inducing absorption of the bone, then expanded in all directions. It possessed an irregular tuberculated surface, and soft brain-like consistence. It had encroached upon the joint; and there was a commencement of similar growth in the external condyle of the femur.

A few weeks ago I amputated a foot in private practice, on account of a medullary sarcomatous growth the sise of an orange, that proceeded from the *os calcis*. There is at present living in town, under the care of Mr Davidson, Roxburgh Street, a man of fifty-seven, who labours under this disease in the unusual situation of the sacrum. The tumour is large and bulging; the integuments are dark-coloured; and though the consistence of the swelling is in general firm, some parts convey such a deceptive feeling of fluctuation, that one not familiar with this resemblance could hardly avoid introducing a lancet. The patient suffers great pain in the tumour as well as the rectum and other neighbouring parts.

The following is an instance of the other kind of growth, which may be named the fibro-cartilaginous tumour. In the second volume of John Bell's Principles of Surgery, p. 180, a case is related of which some extracts will be sufficient to give an idea of its most important features.

" A young gentleman, Mr H——, about 25 years of age, of an athletic form, and healthy constitution, and without the slightest taint of disease, hereditary or acquired, had, from no perceptible cause, a tumour, firm, cartilaginous, and elastic, seated so fairly in the centre of the gums, as to raise the two centre teeth of the lower jaw from their sockets far above the general range of the teeth, and separate the two that lay adjacent." —" The tumour was about the size of a walnut, irregularly globular, knobby and shining."—" A tyro must have believed it to contain a fluid."—" I was well aware that not a drop of fluid would follow a puncture, that the tumour inflaming, would turn out its edges, spread into a fungus, and in a few months cause a horrible and melancholy death."—" Dr Monro, Mr Allan, and myself having consulted on the nature of this tumour, declared it to be of a most dangerous nature."—" We explained to our patient that it contained no fluid,—was incapable of suppuration,—was sure to become cancerous,—admitted of no delay, —and that we dared not do less than extirpate it from the very root." Mr Bell describes the operation, and represents by drawings the appearance of the tumour, both before and after the operation. He used " a scalpel of special strength."—" All my strength of hand was requisite to carry the knife down to the angle."—" I cut with such decision, with such level lines, and made them so fairly meet with each other in the angle, that by pressing my two thumbs, one within side of the tumour, the other without, I pushed it out clear and unmangled."

" This gentleman is perfectly cured ; the gums and adjacent teeth firm and sound ; and I confess I could not reflect on the structure of this small tumour, without saying within myself, What would have been the state of this tumour in three months ? What would have been his state in six or eight ? In its second stage, in little more than three months it must have filled the mouth with a fetid bleeding fungus ! In eight or ten months it must have assumed the perfect character of incurable loathsome cancer !"

It is evident that Mr Bell did not make the distinction that seems to be required between the medullary sarcomatous and cartilaginous growth of bone. If this tumour had been of the former kind the result of his operation would not have been so satisfactory, and he would probably have had to encounter the fungous excrescences he so impressively describes. As it was, the morbid disposition still remained, and after lying long latent, at last showed proof of its existence. About twelve months ago, that is, twenty-two years after Mr Bell's operation, this gentleman applied to me on account of a tumour which so precisely resembled the one described by Mr Bell in size, situation, appearance, and consistence, that the engraving in his work would have answered equally well for representing it, with the exception of the two front incisors being now absent. He stated that the swelling had commenced some months previously, and was increasing. He had little or no pain, but a sort of uneasiness about the mouth and numbness of the lip.

In consultation with Dr Shortt and Mr Nasmyth, it was resolved to cut out the tumour again, and this was accordingly done. It then appeared that the morbid formation descended in the interstices of the bone, and when, by means of the cutting-pliers and gouge, nearly the whole thickness of the jaw at the part concerned had been removed, the surface presented still showed cells filled with the same unhealthy substance. It was now evidently the most prudent course to saw through the bone on each side of the affected portion, but this proceeding was much more severe than the patient or his friends contemplated, and as the former operation, though not radical, had afforded so long an interval of freedom from visible disease, it did not seem warrantable, and therefore the actual cautery was applied very freely in its stead.

The wound healed kindly, and the cure seemed to be complete. At the end of two months, however, the patient observed that there was more than usual fulness under the tongue, and it soon afterwards became obvious that the tumour was growing again along the whole extent of the jaw concerned in the former operation. The propriety of removing the affected part of the jaw was now strongly represented to the patient. He then consulted a person, who, for several weeks, made him believe that the external application of ointments would remove the swelling. Being at length awakened from this delusion by the decided opinions of Drs Ross, Shortt, and Hunter, Sir George Ballingall, Mr Nasmyth, and myself, he submitted to the operation, which was performed in the usual way. The jaw was divided on the right side, opposite the second bicuspid tooth, and on the left, immediately anterior to the last grinder, but as it appeared that, though the external part of the bone was sound here, a process of the cartilaginous growth extended into its centre, another portion was taken away, so that nothing but the ramus was left on this side. The wound healed everywhere by the first intention—on the ninth day the patient shaved himself completely, and he has remained since perfectly well. Five months have now elapsed, and he seems to be safe from any relapse. He speaks with perfect distinctness, and is so little altered in appearance that no one would suspect any thing unusual in the state of the mouth.

Had this tumour been left to itself, it would not probably have led to the frightful consequences anticipated by Mr Bell, but rather have gone on increasing in size, like the similar growth which was removed from the young man Penman, after repeated ineffectual attempts had been made to excise it, and being ultimately allowed to grow until it weighed four pounds and a-half.

Exostosis of Great Toe.—In the 26th volume of this Journal, there is a paper by Mr Liston on Exostosis of the Toes, the object of which is to recommend amputation of the toe in preference to the removal of the tumour, which he asserts to be of no use. As an operation so severe and distressing, from the deformity which it occasions, must be performed with extreme reluctance, the two following cases seem deserving of notice.

Hannah Dickson, aged 19, four years ago observed a hard tumour at the edge of the nail of the great toe, which gradually increased, and at length proved so troublesome, as to induce her to submit to an operation for its remedy, which was performed on the 9th of May.

The nail having been cut away so far as it did not adhere to the parts below, which was for about half of its breadth and up to its root, a semilunar incision was made on each side of the tumour, the size of which was equal to that of a small nut; and the neck of the exostosis was divided with the cutting-pliers. A piece of caddis was then applied to the wound. The patient suffered no trouble afterwards; was able to walk in a few days; and has continued quite well ever since.

Mrs Hamilton, aged 35, applied at the Hospital on the 19th of May, labouring under a complaint precisely similar in all respects to the one just described. It had existed two years, and rendered her very lame. The excision was performed in the same manner, and was followed by a recovery equally speedy and complete. The exostoses removed in these two cases were precisely of the same kind, size, and figure, as those described and represented in the paper referred to.

Dislocation.—Several cases of dislocated humerus have occurred, without presenting any thing remarkable; but a dislocation of the elbow which was met with in private, deserves mention, on account of a peculiarity in its diagnostic symptoms. Dr Begbie asked me to see a boy who had met with an injury of his arm. The projection of the olecranon backwards, and that of the humerus forwards, left no room for doubting as to the existence of dislocation in the ordinary direction backwards. But the limb was perfectly straight, instead of being bent, as it usually is in such circumstances, unless it was supposed that the brachiaeus had been ruptured. The reduction was readily accomplished in the usual manner.

Chronic Inflammation and Ulceration of Joints.—The actual cautery has been employed in a great number and variety of diseased joints with so much advantage, as to satisfy all who observed the results of its application, that it is the most effectual remedy in a numerous class of such cases.

John Tulloch, aged 31, from North Rondaldsha, one of the most remote of the Orkney islands, was admitted on the 11th of May, on account of a great enlargement of the right knee. It commenced below the patella, and extended upwards to the farthest limit of the synovial membrane. The circumference of the joint measured twenty inches, and the swelling, so far as could be ascertained by external examination, was partly fluid, but chiefly of solid consistence. The patella seemed to be much larger than usual, and when moved laterally, occasioned a very distinct crepitation. He complained of a constant deep-seated gnawing pain, which was particularly severe at night, and was referred principally to the lower part of the tumour, near the head of the tibia. The knee was slightly bent, and quite useless in walking, which he could accomplish only when assisted by a crutch.

The complaint was of more than twelve years standing, but had not rendered him unfit for work until five years ago, when, in consequence of a fall, it became aggravated, and has, since that time, become progressively more severe. He had been leeched and cupped without any benefit.

The cautery was applied on the 16th, so as to form an eschar on the outer side of the joint four or five inches long. Next day he stated that he had passed a more comfortable night than he had done for the last two years, and his whole appearance indicated great relief. In three or four days the swelling was greatly diminished on the side to which the cautery had been applied, and the patient felt in all respects much better. On the 20th the knee was burned on the inner side at his own request, and he afterwards went on improving, though not so rapidly as after the first application of the iron. On the 9th of June the knee measured only fifteen inches in circumference, the girth of the sound one being fourteen. The joint could be moved without pain, but he was not able to rest any weight upon it. He then suffered an attack of erysipelas, which was at that time very prevalent in town, attended with great constitutional disturbance, for the remedy of which the chief means employed consisted of the tartrate of antimony. Towards the middle of July a marked progress towards amendment was visible, the patella being reduced to nearly its natural size, and moving freely without any crepitation. At the same time the patient began to recover some command over the joint, which still, however, continued preternaturally lax, allowing the head of the tibia to be moved from before backwards, as if the ligaments were destroyed. He returned home on the 2d of August with every prospect of gradually regaining some strength in the limb, but at all events freed from the pain he previously suffered, and no longer threatened with the necessity of amputation.

Suppuration of Wrist-Joint.—When inflammation of a joint ends in suppuration of the articular apparatus, it is impossible to predict whether or not caries will be induced, and it is only by the decision of time that this question can be answered. It is therefore necessary to be cautious in condemning such cases as incurable, especially those of them that originate from wounds, because this sort of irritation is sufficiently powerful to occasion suppuration of a joint in the soundest constitutions, where caries rarely occurs.

Thomas Smith, aged 19, from Kirknewton, was admitted on the 2d of April, recommended by Dr Dick of Mid-Calder, on account of a very formidable-looking affection of the right wrist.

The hand and lower part of the arm were much swelled, and quite powerless. Over the styloid process of the ulna there was an ulcer about the size of a half crown, having a soft spongy surface, and affording a copious thin discharge. A probe passed readily at the centre of this opening into the cavity of the joint, and grated over the bones composing it, which were divested of their coverings.

A small deep-seated encysted tumour, adhering to the bone, which had existed three years, was removed in the country six weeks previous to his admission into the Hospital. Inflammation followed the operation; and the limb was gradually reduced to the state which has been described.

Simple dressing, succeeded by sulphate of zinc lotions, and careful pressure of the limb, effected by a roller, applied from the fingers upwards, were used with so much advantage, that the patient returned home at the end of three weeks nearly well. The wound was healed, the swelling was entirely removed; and though the limb remained somewhat distorted, owing to the injury which the joint had sustained, it promised to be soon as useful to him as ever.

Thomas Melville, aged 60, from Leuchars, in Fife, recommended by Dr Graham of Cupar, was admitted on the 20th of July in the following state. The left hand was thickened in the region of the carpus, on the posterior surface of which there was an opening that allowed the probe to pass down to the bone, which was bare and loose. In the palm there was also a small aperture, which led to a narrow sinus, extending towards the former one. The thumb was drawn inwards, and, together with the fingers, was nearly quite rigid. The patient complained of severe and unceasing pain in the back and palm of the hand.

Somewhat more than a year and a-half ago he received a puncture in the palm of the hand, between the metacarpal bone of the thumb and fore-finger, from the prong of a pitch-fork. Great pain and swelling, with constitutional disturbance, followed this injury, and his complaints having subsided into a chronic form, have ever since rendered him unable for work. He applied to various practitioners, regular and irregular, and was treated with a corresponding variety of judicious and injudicious means of relief, but without experiencing any permanent benefit from any of them; and he had at length resolved to part with his hand, unless some efficient remedy was speedily afforded.

The opening on the back of the hand having been slightly enlarged, two loose pieces of dead bone were extracted. In a day or two afterwards the cavity was carefully examined, and found to communicate with the opening in the palm. A silk thread was passed from the one to the other, with the view of introducing some escharotic, if the state of the bones should be found to require it; but as no trace of caries could be discovered subsequently, it was withdrawn, and acetate of lead lotion applied to the sore parts. He improved daily; the openings healed; the burning pain of the hand gradually diminished; and the fingers as well as the thumb became more moveable. He was dismissed on the 9th of August.

Caries of Elbow-Joint.—William Ford, aged 30, seaman, was admitted on the 13th of May, on account of diseased elbow-joint. About a year previous to this time, while on his passage home from America, he suffered a severe strain of the elbow while steering the ship. The arm soon afterwards became very stiff and painful, so as to render him unfit for duty. Having arrived in the Thames he lay for several weeks in the Floating Hospital, where he became worse. He then went home to Leith, and was sent to the Surgical Hospital by Mr Cheyne.

The limb was greatly enlarged and indurated, not only about the joint but to a considerable distance above it, and for nearly half way down to the hand. There were several openings at different parts of the arm which discharged copiously, and allowed the probe to enter very deep, but not to reach the bone. He suffered great pain with hardly any intermission, and could not bear the slightest attempt at flexion or extension.

When admitted, he laboured under a short harassing cough, which in a few days became more severe—and being attended with a very rapid pulse and profuse expectoration, excited serious apprehension as to the state of his lungs. At his own request he was dismissed on the 4th of April, in order to recruit his health sufficiently to bear the operation which was requisite for removing the disease.

He returned on the 12th of May, when his general health seemed much improved, but the state of the arm was much worse. The swelling and discharge had increased, while the whole appearance of the arm indicated an extension of the disease. The cough still continued, but was very slight, and accompanied with a very inconsiderable mucous expectoration Had the condition of the joint been favourable for operation, or the condition of the system such as to promise a favourable process of recovery, it would have been thought right to perform excision of the diseased bone, not only to save the patient's arm, but also to avoid the risk attending amputation in a patient exhausted by long suffering and profuse discharge. But as there was reason to suppose, from the great extent and hardness of the swelling, that the operation for removing the articulation would be extremely severe, and be followed by very profuse suppuration, together with exfoliation, and as the patient was exceedingly weak and irritable in mind as well as body, it seemed better to take off the arm.

The operation was performed on the 8th of June almost by force, the patient having made up his mind to it again and again, but always drawn back when the time he had fixed arrived. Next day his pulse was 134, and his skin very hot. Great apprehensions were entertained of internal effusion owing to this great excitement of the system, which continued for several days and then gradually declined. The means employed to allay it were chiefly the tartrate of antimony, and also opiates, with blisters to the legs. He was dismissed on the 29th of June.

Caries of Tibia.—William Laird, aged 32, was admitted on the 5th of April, labouring under an affection of the left leg and knee, which presented the following appearances. In the course of the tibia there were several openings which allowed the probe to reach the bone and enter into its substance, which was bare and of a cellular structure. The knee was considerably enlarged, and when pressure was made on it, pus flowed out at the openings in the leg. The patient's countenance indicated extreme suffering and exhaustion—the lips were pale, and his eyes had a dull unmeaning expression. He stated that the leg was shattered by a kick from a horse fifteen years ago, and that several pieces of bone had subsequently separated. After a tedious cure he at length got well, and continued so until six weeks before the time of his admission, when he was suddenly seized with violent pain in the limb, which suffered no remission or abatement.

The limb was amputated by double flap on the 7th; the muscles seemed as if separated from each other by dissection or putrefaction, and all the parts were so very much relaxed that the operation would have been better performed by a simple circular incision down to the bone. The patient lost more blood than usual, owing to the number of vessels which required to be tied, and the difficulty of securing them. About two hours after the stump was dressed, a considerable bleeding occurred and rendered it necessary to tie another small artery. Next day the patient expressed satisfaction with his condition, as he had slept well and was free from pain. Alarming symptoms of exhaustion then appeared, and he was stimulated frequently with small doses of whisky and warm water. On the second day he was in much the same state; on the third he was sunk down in bed; his countenance anxious; tongue dry; pulse 170; the stump shrunk and secreting little matter. The bowels were opened by injection and the stimulation was continued. He rallied towards the evening, when his tongue became moist, and his pulse fell to 120. He looked and felt better. On the fourth day he continued in a more promising state, the stump also was improved in its condition; on the fifth day he relapsed into his former weakness; on the sixth he remained much the same; and on the seventh he died.

On dissection forty ounces of sero-purulent fluid were found in the left cavity of the chest. The corresponding lung had suffered the alteration named grey hardening, and sunk in water.

When the amputated limb was examined it appeared that the cavity of the joint communicated with several carious excavations in the head of the tibia, and that this bone was thickened, softened, and carious throughout nearly the whole of its extent.

Dropsy of Knee-Joint.—Several cases of dropsical effusion into the knee-joint came under treatment, and one of them, viz. that of Helen Jackson, aged 40, was remarkable on account of its large size. They yielded readily to blistering, followed by pressure.

Moveable Cartilage.—Anne Miller, aged 14, applied on the 12th of December, labouring under a painful enlargement of the knee, which prevented her from using the limb. She had been complaining of the joint for several years, but was only of late rendered unable for work as a house-servant. The swelling evidently depended for the most part on the presence of a fluid, and blisters therefore were applied, first on one side of the knee, and then on the other. The distension having been thus removed, two small moveable bodies were felt within the articulation, one on each side of the ligament of the patella. She was advised to wear a laced knee-cap, and on the 15th of February resumed her occupation, which she has followed ever since.

Some time ago Mr George White asked me to see a young medical gentleman who was confined to bed in consequence of a strain of the knee, and who had discovered two or three moveable bodies within the joint to which he ascribed his suffering. He was anxious to have them cut out, but we advised pressure, and he has been quite well ever since, though the cartilages are still as perceptible as they were.

Ganglion of Knee.—Mary Auld, aged 21, was admitted on the 10th of May, on account of a tumour about the size of half of a small orange, seated on the patella, which was so painful as to render her lame. The swelling evidently depended on a morbid accumulation of fluid in the subcutaneous bursa that lies over the patella, and thickening of the membrane composing it. A small puncture, therefore, was made with a needle, and the contents having been thus evacuated, a blister was applied. The raw surface was then dressed with a mixture of iodine and camphorated mercurial ointment, and carefully bandaged. She was dismissed quite well on the 19th of May.

Hernia.—John Manson, aged 61, was admitted on the 15th of May, labouring under a large strangulated scrotal hernia of the right side. He had been subject to occasional protrusion of the bowels in this situation for more than thirty years, but never wore a truss. On the evening before his admission, while making an exertion in putting up a bed, the gut suddenly came down to a greater extent than it had ever done previously, and he felt severe pain, stretching from the tumour into the lumbar region, with sickness. During the night he vomited occasionally, and continued to do so the succeeding day, at the same time complaining of pain, and exhibiting the other ordinary symptoms of strangulated hernia. After his admission, at 2 P. M., repeated simple, purgative, and tobacco injections were thrown into the rectum, without producing any evacuation, and careful attempts at the taxis proved unavailing. Towards the evening his pulse became more frequent and small; his appearance indicated greater suffering; and his abdomen was observed to be tender on pressure. He was bled to the extent of ten or twelve ounces, his weakness seeming to render the abstraction of a larger quantity improper. At 9 P. M. his pulse was 130; the abdomen was more tender, and his condition was evidently becoming progressively worse. In consultation with my colleague, it was agreed, that though large hernias seldom require operation, and there was little reason to suppose the stricture at the neck of this one could be productive of much inconvenience, considering the thickness of parts necessarily included within it, we should nevertheless not be justified in allowing the peritoneal inflammation to proceed, without ascertaining by actual examination that there was no cause to excite or maintain it within the tumour.

An incision about three inches long was made in the direction of the swelling, beginning a little above the external ring. When the sac was opened, eight ounces of serous fluid excessively fetid, escaped. An aperture having been formed at the neck of the sac sufficient to admit the fore and middle fingers, it was ascertained that the protruded parts were but slightly embraced by either the outer or inner orifice of the inguinal canal; and as it followed that the seat of the evil lay elsewhere, it was then thought right to bring into view the whole of the protruded viscera. This being done, they were found to consist of the *caput cœcum*, with its vermiform appendage, and a loop of the ileum. The former was natural in its appearance; but the latter was very soft and black-coloured, though not mortified. The ileum was returned; but the *caput cœcum*, which was greatly distended with flatus, could not be replaced; and the only alternative that remained for choice was to leave it protruded, or puncture its coats, so as to allow of their collapse. The latter was decided on, and immediately executed; and as some thin feculent matter issued, along with the air, a ligature was passed through the edges of the wound in the gut, and fastened to the skin. Some stitches were then introduced to approximate the integuments. The patient obtained no relief, and died at half past three the following morning.

On dissection it was found that a portion of the ileum, about two feet in length, was twisted twice round that part of the gut which enters the cœcum, so as to cause a most complete and irremediable obstruction. The loop of the ileum, which had been protruded, was recognized by its dark colour, and had no connection with this convolution.

Lithotomy.—John Valentine, aged 50, from Berwickshire, was admitted on the 9th of March to be cut for stone, under the symptoms of which he had laboured for seven years. He appeared a stout country man, but was very low spirited, and suffered from a violent pulsation in the epigastric region, which frequently produced a visible elevation of the bed-clothes.

He was confined to bed after his arrival, to render the condition of his system more favourable for the operation. On the

15th, a calculus between three and four ounces weight was extracted without any delay or difficulty, but an unusual degree of bleeding attended the operation. After he was put to bed the hemorrhage continued, and a tube wrapped with several folds of lint was introduced into the wound. The blood continued to issue by drops during the day, with occasional intervals, but ceased towards the evening, when he had lost by computation about three pounds. During the night there was a discharge of urine from the tube, and the patient felt pretty comfortable. Early in the morning he vomited, and soon afterwards began to complain of pain in the hypogastric region. It became progressively more severe; his pulse could not be felt at the wrist; and his countenance indicated extreme distress. He died in the evening about eight o'clock.

On dissection the peritoneum was found more red than usual, and at some points small spots of extravasated blood were perceptible. When the parts concerned in the operation were examined, a small firm clot of blood attracted attention to the incision of the prostate, and it was discovered that an artery about the size of a digital branch lying on the side of the gland had been opened. This vessel precisely corresponded with the representation of Tiedemann, and the descriptions by other authors, of that irregular distribution of the pudic, in which the dorsal artery of the penis runs along the neck of the bladder, and crosses the prostate obliquely in its course. It must be rare for this unusual distribution to occur along with the far from common disease of urinary calculus; but when this unfortunate combination is met with, the result of the lateral operation can hardly be successful. In this case the incision of the prostate was at an equal angle between the transverse and perpendicular directions, yet the vessel was cut. The preparation is preserved.

The result of the following case, though operated upon under less promising circumstances, was more fortunate. Mr Sidey asked me to see Mr S., aged 80, who for several years had suffered severely from the symptoms of stone, and for nearly the twelve last months had been confined to bed by them in the greatest distress. It was explained to him that at his time of life the operation was attended with much more danger than at an earlier age, but that the chance of its success was still in his favour. He resolved on submitting to it, being unable to endure his suffering any longer. On the 15th of May, twenty-three stones from the size of a pigeon's egg downwards were extracted, not without difficulty, owing to the great capacity of his bladder, which had lost its tone, and been so much distended, that Mr Sidey repeatedly having found it necessary to introduce the catheter, drew off several pounds of urine. He never had any bad symptom from the operation, but was for several weeks so extremely feeble that great apprehension was felt of his sinking. The wound is not entirely healed yet, but he is, and has been all along, free from pain.

Abscess of Perinæum.—Robert Gavin, aged 21, applied on the 26th of June to have his water drawn off, which was readily done by means of a full-sized catheter. He stated that the day before, he had been exposed to cold, and since then felt unable to empty his bladder. He returned the day following, and was again relieved by the same means. As he now complained of pain, and a slight degree of fulness in the perinæum, a few leeches and warm fomentations were recommended. His complaints still continuing, he was admitted on the 28th; on the 30th an abscess was discovered in the perinæum, and immediately opened, when he felt complete relief from the pain, and afterwards experienced no difficulty in passing his urine. He was dismissed on the 3d of July quite well.

Dr Fife asked me to see a middle-aged man, a chairman, who laboured under a painful swelling of the perinæum, with inability of making water. The fluctuation of matter being distinct, a free incision was made through the skin and fascia, which evacuated nearly half a pound of extremely fœtid pus. His water was then drawn off, and he did not afterwards require the catheter.

Dr Combe, of Leith, asked me to see Mr D., who had been suffering eight or ten days under severe pain of the perinæum, with difficult micturition, and at length was observed to discharge pus from the urethra along with the urine. There was no tumour or tension of the perinæum, but a hardness along the crura of the penis. An incision having been made here without any benefit, the rectum was examined, and an abscess was felt pointing a little anterior to the prostate gland. A probe-pointed bistoury being conveyed into the gut, was thrust into the cavity of the abscess, and then carried outwards, so as to divide the sphincter, and integuments between the part where the matter pointed and the perinæum. The cavity when examined by the finger was ascertained to be of great extent. It gradually contracted, and though the patient's urine passed through the breach for some time, the cure was completed in the course of a few weeks.

These three cases, which occurred much about the same time, are interesting as examples of a very distressing complaint at different stages of progress.

Obstruction of Urethra.—William Swanston, aged 32, from Coldstream, was admitted on the 29th of July, recommended by

Dr Turnbull. Five-and-twenty years ago he received a kick from a horse on the perinæum, which occasioned difficulty in making water, and soon afterwards the formation of an abscess, which opened, and thus afforded a passage for the urine. The old canal then became entirely closed, and has continued to be so ever since, notwithstanding the attempts of various practitioners to restore it. He lately felt great difficulty and pain in voiding his water through the fistulous opening in the perinæum, and was hence induced to apply to Mr Turnbull for assistance, who found, on introducing a probe, that there was a small calculus blocking up the passage, and extracted it after slightly dilating the orifice of the fistula. It was about the size of a millet seed. The urinary symptoms were relieved for a day, but then recurred, and it was thought right for the patient to come to town.

The obstruction was found on examination to be of small extent, but extremely firm. It was divided by passing a catheter as far down as possible, and cutting with a straight sharp-pointed knife upon its extremity. The continuity of the canal was thus restored, without making any external incision.

Sarcocele.—John Bell, aged 54, from the East of Fife, was admitted on the 1st of April, to be relieved from a large swelling of the right testicle, which had existed three years, and attained a size equal to twice that of a goose's egg. It was extremely hard and uniform in its consistence, except at the highest part, where the fluctuation of a very small quantity of fluid was perceptible. He suffered no pain in the tumour, but was so much incommoded by its weight and bulk, as to be desirous of having it removed.

The operation was performed on the 5th, according to the principles which have been already explained in these reports, which are, to leave merely skin enough to let the edges of the wound meet together—to cut across the chord before dissecting out the testicle—and to tie the arteries one by one. He suffered no fever in consequence, and might have returned home very soon; but, being averse to leave the Hospital before the wound was perfectly cicatrized, did not do so until the 11th of May.

The tumour when divided exhibited a characteristic specimen of vascular sarcoma, and could hardly have been distinguished from the same sort of growths which are so frequently found connected with the uterus. At the neck of the gland there was a small cyst containing a dark-coloured fluid.

John Reid, aged 21, was admitted on the 3d of August, recommended by Dr Abercrombie, on account of an enlargement of the left testicle, which had existed from birth, and attained nearly the size of a goose's egg. It was of a round shape, and rather unequal surface, there being a number of slight prominences, which seemed to depend on fluid contained within thin cysts. The superficial veins were much enlarged. The chord was sound. He suffered no pain in the swelling, which had enlarged considerably during the last twelve months; but felt an uneasy sensation in his back, and was anxious to be freed from the disease.

The operation was performed on the 6th, when the only circumstance deserving notice that presented itself, was the number and large size of the arteries; three were tied at the time, and a profuse hemorrhage, that occurred six hours afterwards, rendered it necessary to secure four more.

Hydrocele, with Enlargement of the Testicle.—John Watson, aged 30, was admitted on the 8th of April, labouring under a hydrocele of the right side, which had existed for eighteen months. Twenty ounces of serous fluid were drawn off; and then the testicle was found to be greatly enlarged, of irregular figure, and almost stony hardness. The urethra being examined, was ascertained to be very tightly strictured at the bulb.

The stricture was readily removed by the successive introduction of bougies gradually enlarged in size; but the swelling of the testicle remained stationary. A blister was then applied to the scrotum, which was followed by so considerable a diminution of the enlargement, that it was thought proper to perform the operation for radically curing hydrocele by injection. This was done on the 8th of May, and no disagreeable symptoms succeeded; but the fluid again accumulated. He next used the iodine ointment, with camphorated mercurial ointment, under which the testicle was at length reduced to its natural size and softness.

Hydrocele.—Of the cases of simple hydrocele, the only one that seems deserving of notice is that of Alexander Mackay, aged 40, from Caithness, who, in consequence of a blow on the perinæum from the oar with which he was rowing in a very tempestuous sea, has for the last ten years laboured under a swelling of the scrotum. The tumour was found to depend on hydrocele of the left *tunica vaginalis*; and forty-four ounces of greenish yellow fluid were drawn off by a trocar. It was observed to contain a very large quantity of those bright shining scales which Dr Christison first examined, and found to resemble cholesterine. Dr Bostock regards them as the result not of peculiar secretion, but of mere chemical action taking place in the effused fluid, similar to the conversion of solid animal substances into adipocire, which results from long maceration in water. It may be mentioned in confirmation of his opinion, that when the fluid which had accumulated in this case was withdrawn ten days after the first puncture in order to perform the radical cure by injection, it did not contain any scales.

Excision of the Os Uteri.—Janet Bell, aged 40, from near Biggar, recommended by Dr Molison, was admitted on the 19th of July, to be relieved from an excrescence which grew from the mouth of the uterus, and protruded out of the vagina. It was of a conical shape, the base being turned downwards, and the apex connected by a narrow attachment with the posterior lip of the uterus. Its consistence was so firm as nearly to equal that of the uterus itself. The patient complained of frequent severe shooting pains in the lower part of the belly, and a profuse fetid discharge from the vagina. She had laboured under the complaint for four years. At the anterior side of the vagina, immediately behind the orifice of the urethra, there was a thick cyst about the size of a walnut, adhering by a broad base, which did not seem to occasion any inconvenience.

The excrescence was cut away from the *os uteri* by means of scissors, and, as there threatened to be a troublesome bleeding, one ligature was applied, and caustic rubbed upon the mouths of the smaller vessels.

In the evening she got up to make some alteration in her dress, and soon afterwards it was observed that blood was dropping from her bed upon the floor, when she suddenly fainted. A hook was introduced into the remaining portion of the lip of the uterus, and by its means the bleeding surface was drawn into view. It being found impossible to procure a firm hold for ligatures, either when applied to single vessels, or made to embrace the whole wound, a needle was passed from before backwards through the lip so as to convey two threads, which were then tied one on each side, and effectually restrained the hemorrhage. Colic pains, sickness, and vomiting succeeded, but were relieved by injections into the rectum, and she recovered without any particular occurrence, and left the Hospital on the 3d of August.

The excrescence was found to consist of a firm vascular sarcomatous mass containing cysts of various sizes. It would no doubt have been considered an instance of cancer by those surgeons who are accustomed to speak of extirpating cancers of the neck of the uterus. So far, indeed, as can be judged from the loose and inaccurate language which has been generally employed to describe the morbid characters of the masses amputated on such occasions, it is quite evident that they have rarely, if ever, been truly carcinomatous formations or ulcers seated in such textures, but merely sarcomatous excrescences, devoid of any malignant action. The result of these operations leads to the same conclusion; for, granting that the disease was truly cancerous, it cannot be denied that a large proportion of the cases must have terminated fatally, from part of the morbid structure being allowed to remain, owing to the difficulty of ascertaining its extent, and effecting its removal in such a situation; or from the effects of the cancerous diathesis operating in other regions of the body. But of seventy cases in which Lisfranc operated, the success has been almost uniform. One woman, though the wound did not heal for two months, became pregnant fourteen days after the operation, and went her full time. In all the cases of cancerous uterus that have come within my observation, the body of the organ was distinctly affected.

Recto-Vaginal Fistula.—In the Third Report there is related a case in which a recto-vaginal fistula, that did not admit of closure, owing to its width and the morbid state of the parts concerned, was treated by dividing the septum between the two canals. The consequence of this operation was relief from the constant pain and involuntary discharge of feculent matter which the patient had previously suffered; and in the course of a short time afterwards, through the attention of my late pupil Dr Login, a stricture of the rectum that had existed for several years being also removed, she became perfectly well, and has continued so ever since.

This case afforded much encouragement to undertake the case of Anne Anderson, aged 28, from Arbroath, admitted on the 8th of June, who had been dismissed incurable from another hospital after remaining in it several weeks. There was a fistulous communication between the vagina and rectum, which readily admitted the fore-finger to pass through it, at the distance of about an inch from the respective orifices of these canals. There was a number of hemorrhoidal excrescences round the verge of the anus, and several extensive cicatrices in the neighbourhood. Three inches up the rectum there was a slight stricture of the gut. The patient was a stout active-looking woman, but rendered very miserable and almost hopeless by the loathsomeness and continuance of her sufferings. She gave a confused account of her complaint, which seemed to have commenced with *fistula in ano* about two years previously, after a miscarriage at the fourth month, which had been induced by cold and fatigue.

The septum was divided, and the hemorrhoids cut away, on the 11th, and no troublesome symptom followed. The wound contracted and cicatrized, so that she soon regained command over the contents of the rectum. She was dismissed on the 16th of July.

There can be no doubt that the recto-vaginal fistula ought always to be closed if possible; but in cases where this is impracticable, and they unfortunately constitute a large majority of the whole, the practice of which an instance has just been related seems deserving of adoption.

Elizabeth Woodrow, aged 20, recommended by Dr Cummings, was admitted on the 20th of June on account of stricture of the rectum, and a fistulous communication with the vagina at its upper extremity, immediately between the posterior lip of the uterus and the rectum. The stricture was very tight, not admitting the point of the finger, and lay about three inches from the orifice. The patient had from a very early age, if not from infancy, suffered from the symptoms of obstructed rectum; but the seat of her complaint was not discovered till she came under the care of Dr Cummings; and so far had the misconception regarding it been carried, that one practitioner prescribed a course of mercury, in the belief that the discharge from the vagina, which proceeded from the rectum, depended on syphilitic poison.

The stricture has been considerably dilated, and she is much relieved from her sufferings. In this case the septum is too extensive for division; and the small size of the aperture affords hopes of effecting its obliteration, when the gut has been restored to a healthy condition.

Disease of Mamma.—Helen Kirkwood, aged 45, from Earlston, was admitted on the 18th of February, on account of a scirrhous breast, which had been troublesome for eighteen months. The gland was quite moveable; the integuments, except at one part of small extent below the nipple, where they adhered, were free from disease, and there was only one enlarged gland in the axilla. The operation was performed on the 21st, and she was dismissed on the 30th of March, having been delayed in her recovery by several feverish attacks, apparently depending on a very irritable constitution.

Mrs Straton, aged 57, was admitted on the 7th of August, on account of a very large tumour of the left breast, which commenced eight years ago by a small hard knot under the nipple. It is now larger than her head; very heavy, and irregular on the surface, which in some of the most prominent parts is of a bright purple colour. She complains of great pain in the swelling. There is no disease in the axilla, and the gland is quite free from connection with the subjacent parts.

Whatever may have been the nature of this morbid growth originally, there is reason to fear that it has now taken on the medullary sarcomatous action; but as the patient enjoys good health and spirits, and as the local circumstances are favourable for the success of an operation, it is thought right to perform the excision, and the result will be stated in the next report.

Ranula.—In last report the opinion has been stated that the disease named ranula does not in general depend on distension of the salivary ducts, but consists merely of an encysted tumour. It ought to have been added, that three cases which occurred during the period embraced by that report, agreed with this view of the nature of the complaint. The following one also exhibited a similar structure.

George Simpson, aged 23, from Dalkeith, was admitted on the 19th of May on account of a large tumour under the tongue, which pressed it back almost out of sight, so as greatly to impede respiration, deglutition, and articulation, and occasioned a considerable fulness under the chin. The swelling had existed twelve months, and increased gradually. A probe was passed first into one, and then into the other submaxillary duct, as far back as the respective glands, without entering the cavity of the tumour.

An elliptical portion of the mucous membrane and cyst having been removed by means of a hook and knife, a great quantity of greyish yellow granular semifluid matter, having precisely the consistence and appearance of thin porridge, issued from the opening. The sac being found extremely thick and tough, was pulled out and detached for the greater part of its extent from the surrounding parts, to which it loosely adhered. The patient for two or three days afterwards suffered from swelling of the throat, with pain and difficulty in swallowing, and some symptomatic fever, but soon got quite well, and was dismissed on the 27th.

Cancer of Face.—Thomas Maclaren, aged 69, from Breadalbane, was admitted on the 21st of May, for a cancer of the lower lip, which occupied the whole of its surface from end to end, but did not extend to any great depth. It had existed for four years.

The whole of the morbid part being removed by curved scissors, the external and internal integuments of the remaining portion of the lip were sewed together, and he was dismissed with hardly any visible deformity on the 27th. A similar operation was performed in several other cases of the same kind, and with the same satisfactory result.

Peter Buick, aged 25, from Arbroath, recommended by Dr Arrott, was admitted on the 20th of July, labouring under a most formidable cancerous ulcer of the face. It had destroyed nearly the whole of the lower lip, so that the jaw was exposed from the chin upwards. The edges of the sore were extremely irregular as to shape and colour, the discharge was profuse and excessively fetid; the pain incessant, and, in short, all the circumstances so urgent as to warrant any mode of relief, however severe. The patient had been banished to the West Indies five years ago, and was seized with the disease about two years afterwards. The ulcer was cut out, but soon reappeared, and extended its ravages so widely, that he was considered incurable, and sent home. As he retained his appetite, and had no swelling of the glands, or indication of disease in any other part of his body, it was thought proper to perform excision of the whole morbid surface.

With this view, on the 23d, two incisions were carried through the whole thickness of the cheek, one on each side of the ulcer, and meeting together under the chin, including a third of the upper lip, and the whole integuments of the chin that remained anterior to the bicuspid teeth. The base of the jaw was then divided on each side, opposite to the second bicuspid tooth, with a saw to such extent that the cutting-pliers were enabled to effect a breach through the bone. The connections of the mucous membrane and muscles of the tongue were lastly separated; one small artery was tied, and the edges of the large triangular wound were sewed together as far up as could be done without too much reducing the size of the mouth; the mucous membrane and skin of the remaining portion were united together by stitches of the interrupted suture. The patient made no complaint after the operation, did not suffer the slightest feverish disturbance, and was dismissed with the wound nearly cicatrized on the 5th of August. He articulated with considerable distinctness, and was by no means so much disfigured as might have been expected.

In this case the practice usually followed of removing the teeth which lie in the line where the bone requires to be divided was deviated from, and as it seemed with advantage, the division being completed without more than the ordinary difficulty, and the patient being saved from the pain necessarily attending the preliminary operation.

Before detaching the connection of the tongue, it was placed between the fold of a towel, and given to an assistant to hold. This prevents the disagreeable and alarming accidents which are apt to result from the organ being left to itself, when it falls back into the pharynx, and getting within the influence of the muscles of deglutition, is pushed downwards with such force, as to obstruct the process of respiration,—give rise to violent convulsions, and even occasion death. Such seems to have been the cause of fatal termination in a case related by Dr

Meyer, Junior, of Zurich, in his thesis on extirpation of the lower jaw.[*] The patient was a man of 50, who laboured under an extensive cancer of the jaw, which seems to have resembled Buick's. He died in the hands of the operator, (Langenbeck,) with symptoms of suffocation; and no morbid appearance was found on dissection, except ossification of the pericardium. It is remarkable that the tendency to this displacement ceases very soon after the operation; in five minutes or little more, subsiding so much as to render unnecessary any precaution, except keeping the head bent forwards; and even this is sometimes not required.

Ulcer of Nose.—Elizabeth Ross, aged 28, married, was admitted on the 30th of June, on account of an ulcer about the size of a shilling, which was seated on the extremity of the nose, and threatened to spread, as its edges were ragged, and the surrounding integuments red. She stated that about fourteen months ago she applied to an accoucheur in town with some ailment of the external parts, for which he prescribed five dozen of pills; that her mouth becoming very sore, she had recourse to a physician, who told her that the cause of all her distress lay in the teeth, and ordered out the two canines, and all the incisors of the upper-jaw; not finding any benefit from this energetic practice, she came to the Hospital. The inflamed state of the nose was removed by a few leeches, and then the black wash was applied to the sore. Cicatrization soon commenced, and was speedily completed. She was dismissed on the 18th of July.

Nervous Tubercle.—Mary Comrie, aged 17, applied at the Hospital on the 23d of March, on account of a small moveable subcutaneous tumour, about the size of a large pea. It was seated a little below the middle of the left leg on its outer side. It was of very firm consistence, and adhered with its external surface to the skin. When pressed, it was moderately painful, but occasionally gave rise to paroxysms of the most exquisite suffering, far exceeding, though somewhat resembling, the severest toothache. These attacks lasted various periods, from half an hour to several hours, and were induced by slight external irritations, such as gentle rubbing—or mental agitations, such as sudden alarm; but frequently commenced without any cause that could be perceived. It is remarkable that mental emotions were no less powerful in cutting short the fits than in exciting them. She had not perceived any difference at the menstrual periods.

She observed the tumour two years ago; her attention being directed to it by the pain; and when first noticed, it was as large as at any time afterwards.

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[*] Berlin, 1828.

The tumour when removed exhibited a pearly lustre externally, and possessed a dense cartilaginous consistence. The patient was immediately relieved from all her uneasy feelings.

Cystic Sarcoma of Thigh.—Dr Hatton asked me to remove a tumour from the thigh of a middle aged female, which had existed for a good many years; but lately increased so rapidly as to occasion her considerable uneasiness, and apprehension of worse consequences. It was about the size of an egg, seated on the posterior side of the limb, near the ham, and of an irregular tuberculated figure. Its colour was dark purple, and its consistence seemed to be of a fluid enclosed in distinct cells. Its neck was narrow, but extended into the subcutaneous fatty tissue; whence it was necessary to remove it by means of two pretty deep elliptical incisions. The tumour on dissection was found to possess the structure that had been anticipated.

OUT-PATIENTS.

Abscesses,	102
Amaurosis,	4
Aneurism of aorta,	1
——— carotid artery,	1
——— by anastomosis,	5
Anthrax,	10
Aphthæ of gums,	14
Atrophy of mamma,	1
Bronchocele,	2
Bruises,	178
Bubo,	6
Bunion,	2
Burns,	46
Calculus in bladder,	4
Cancer of mamma,	3
——— cheek,	4
——— eye,	2
——— lip,	6
——— tongue,	2
Cancerous ulcers,	4
Caries of elbow-joint,	10
——— wrist,	2
——— thumb,	2
——— fingers,	3
——— knee-joint.	6
——— ankle-joint	5
——— metatarsus,	2
——— great toe,	1
Cataract,	6
Catarrh of bladder,	5
Chilblains,	4
Compression of brain,	1
Concussion of brain,	1
Curvature of spine,	2
Cutaneous disease,	168
Deafness,	6
Diseased synovial membrane of joints,	6
——— testicle,	2
——— teeth extracted,	116
Dislocation of humerus,	4
——— elbow-joint,	1
——— finger,	1
——— femur, old,	2
Ectropium,	2
Entropium,	1
Effusion into knee-joint,	5
——— bursæ,	5
——— cellular substance	6
Enlarged glands,	20
——— tonsils,	6
Epistaxis,	1
Erysipelas,	51
Exfoliations,	7
Furunculus,	9
Fissures of anus,	1
Fistula in ano,	7
——— lachrymalis,	3
Foreign bodies extracted from hands and feet,	7
Fracture of lower jaw,	1
——— ossa nasi,	2
——— ribs,	10
——— clavicle,	7
——— scapula,	1
——— humerus,	9
——— ulna and radius,	2
——— radius,	4
——— ulna,	2
——— metacarpus,	1
——— phalanges,	2
—————— compound,	8
——— ilium,	2

Fracture of femur,	10
——— patella,	3
——— tibia and fibula,	8
——————— compound	3
——— tibia,	4
——— fibula,	5
——— metatarsus,	2
Fungus of testicle,	1
Ganglion,	5
Gonorrhœa,	22
Gravel,	1
Hæmatocele,	1
Hæmaturia,	1
Hare-lip,	3
Hemorrhoids,	12
Hernia reducible,	13
—— humoralis,	14
Horny excrescences,	1
Hydrocele,	10
Incontinence of urine,	5
Inflammation of absorbents,	2
———— joints,	37
———— veins,	7
Inversion of toe nail,	2
Iritis,	6
Medullary sarcoma of tibia,	2
————— eye,	1
Morbus coxarius,	8
Necrosis,	10
Nodes on skull,	2
Onychia maligna,	4
Ophthalmia,	101
Ostitis,	15
Otorrhœa,	7
Paraphymosis,	2
Partial paralysis,	29
Periostitis,	8
Phymosis,	2
Phlegmasia dolens,	2

Poisoning,	2
Polypus nasi,	6
—— auris,	1
Prolapsus ani,	1
—— of uterus and bladder,	1
Pterygium,	1
Rachitis,	5
Retention of urine,	5
Rheumatism,	59
Rupture of ligaments,	2
——— tendo Achillis,	1
Sarcocele,	4
Sciatica,	5
Scirrhus of mamma,	7
Sinuses,	20
Sore throat,	37
Sprains,	87
Staphyloma,	2
Stricture of larynx,	1
——— vagina,	1
——— urethra,	5
——— urethra, with fistula in perinæo,	3
Syphilis,	29
Tumours,	11
Ulcers,	233
Ulcerated cartilages of knee-joint,	1
———— ankle-joint,	1
Varicose veins,	7
Vertebral disease,	5
Warts,	3
Whitlow,	20
Wounds, gunshot,	2
—— incised,	49
—— lacerated,	47
—— punctured,	23
	1993

In-Patients.

Abscesses,	10
—— of mammæ,	3
Abscess psoas,	1
Amaurosis,	1
Aneurism by anastomosis,	2
Bruises,	9
Bunion,	1
Burns,	9
Calculus in bladder,	4
Cancer of cheek,	2
—— lip,	6
—— eye,	1
—— tongue,	2
Caries of elbow-joint,	8
—— wrist-joint,	2
—— thumb,	2
—— trochanters,	1
—— tibia,	1
—— knee-joint,	1
—— ankle-joint,	3

Caries of metatarsus,	1
—— great toe,	1
Cataract,	2
Catarrh of bladder,	4
Compression of brain,	1
Cutaneous eruptions,	3
Diseased synovial membrane of joints,	6
—— testicle	2
Effusion into knee-joint,	2
Erysipelas,	5
Excoriation of throat from sulphuric acid,	1
Exostosis,	1
Fissures of anus,	1
Fistula lachrymalis,	2
—— in ano,	7
Fracture of ribs,	1
—— clavicle,	2
—— scapula,	1
—— humerus,	4

Fracture of radius and ulna,	1
——— phalanges, compound,	3
——— ilium,	2
——— femur,	9
——— patella,	2
——— tibia and fibula,	6
——— tibia and fibula, compound,	3
——— tibia,	1
——— fibula,	3
Ganglion,	2
Gonorrhœa,	2
Hare-lip,	1
Hæmatocele,	1
Hernia, reducible,	2
——— humoralis,	2
Hydrocele,	10
Incontinence of urine,	1
Inflammation of joints,	12
——— veins,	1
Iritis,	1
Medullary sarcoma of tibia,	2
——— eye,	1
Morbus coxarius,	3
Necrosis of femur,	1
——— tibia,	1
——— skull,	1
Nodes on skull,	1
Opacity of cornea,	2
Ophthalmia,	3
Ostitis,	3

Otorrhœa,	1
Partial paralysis,	1
Periostitis,	2
Phymosis,	1
Phlegmasia dolens,	1
Polypus nasi,	1
Prolapsus ani,	1
Retention of urine,	1
Rupture of ligament of knee-joint,	1
Sciatica,	3
Scirrhus of mamma,	3
Sinuses,	11
Stricture of larynx,	1
——— vagina,	1
——— urethra,	1
——— urethra, with fistula in perinæo,	3
Staphyloma,	2
Syphilitic ulcers,	8
Tumours,	2
Tumour of antrum,	1
Ulcers,	25
Ulcerated throat,	2
Whitlow,	3
Wounds, incised,	8
——— lacerated,	6
——— punctured,	4
	294

OPERATIONS.

Amputation of thigh,	5
——— at shoulder-joint,	1
——— of arm,	2
——— leg,	3
——— through tarsus,	1
——— of thumb,	3
——— finger,	2
——— toes,	3
Artificial pupil,	1
Excision of aneurism by anastomosis,	1
——— cancerous tumour of tongue,	1
——— cheek and lip,	8
——— elbow-joint,	5
——— eye,	1

Excision of mamma,	2
——— testicle,	2
——— tumour from antrum,	1
——— tumours, encysted,	3
——— warty excrescence,	1
Fistula in ano,	5
——— lachrymalis,	2
Hare-lip,	1
Hæmatocele,	1
Hydrocele,	9
Lithotomy,	4
	68

ART. II.—*On the Congenital Malformations of the Heart.* By JOHN PAGET, M. D. President of the Royal Medical Society.

PART I.—DEVELOPEMENT AND CLASSIFICATION OF MALFORMATIONS.

IT is no long time since the opinion that "monsters prove nothing," was advanced by the physiologist as an incontrovertible axiom. A *lusus naturæ*, as such phenomenon was designated, was supposed so completely to set at defiance all the ordinary laws of nature, that not only could no elucidation of these laws be derived from such anomalies, but the very causes on which their formation depended, were thought to be entirely distinct. The falsity of such a doctrine is now sufficiently established. "L'ordre est dans le désordre," are the words of M. Serres, concisely expressing the important truth, that the same laws preside alike over formation and malformation, and that it is only in the more perfect knowledge of these laws, that we can look for a full explanation of such appearances.

The German anatomists seem to have been the first, to attempt the study of monsters on anything like philosophical principles. Sœmmering, Walter, Meckel, and Tiedemann, have enlisted their talents in the cause, and the French, with St Hilaire, Serres, Breschet, Andral fils, amidst a host of others, have engaged in the same pursuit. The importance of the physiological facts exhibited by monsters, has formed for these authors the first attraction; Meckel sees in them, proofs of the gradual developement of different organs; St Hilaire derives from them, arguments in favour of unity of organization; while Serres proves, from the same prolific sources, that the formation of the body takes place from the circumference to the centre. These doctrines have again reacted on our present subject, which, when studied in relation to the splendid discoveries of modern anatomists, as of unity of organization and progressive developement, becomes, from an unintelligible mass of confusion, a beautiful object of scientific research.

It is not our intention to enter at length on the subject of monstrosity in general; but as the same causes must produce the malformation of a single organ as of many, (to which the term monster has been commonly applied,) we may be allowed to say a few words on the causes to which they have been attributed, and the laws which are supposed to regulate their formation. Should we, in the course of these pages, venture to differ in opinion with those whose names we must always hold in the greatest reverence, it is because when, after mature deliberation, we have been unable to agree with them, we think it most respectful openly to express our dissent, actuated by the hope of eliciting further information on points of such difficulty and importance.

St Hilaire was among the first to overturn the absurd doctrines, more wild, if possible, than the freaks attributed to dame Nature herself, which were for a long time entertained as to the causes of monstrosity. Popular credulity alone, now adheres to the belief that mental emotions furnish the only exciting cause, and wonderful indeed are the tales adduced to support it.

After disproving this fallacy, however, as well by observation on man as by the most conclusive experiments on eggs, M. Geoffroy [*] demands an equal universality of influence for external and corporeal injuries. These, he says, occurring during fœtation, produce adhesions between the placenta and embryo, whereby the circulation to a particular part or parts is affected, and the growth modified accordingly. This we might imagine to operate as far as regards the malformation of an extremity, or some part to which the effect of the adhesion might extend; but how it can act in producing an imperfect *septum ventriculorum*, or an open *foramen ovale*, we must confess we can scarcely see, and cannot therefore allow it, as the general exciting cause of congenital malformation.

M. Serres [†] has imagined that he has discovered, if not the cause, at least the manner, in which malformation is produced. He conceives that every artery has its own specific function, and that the developement of every part depends immediately on the presence of the artery proper to that part; as, for instance, that of the cerebrum on the internal carotid; or that of the cerebellum on the vertebral; and consequently, that when any artery fails, the part which it ought to supply is also deficient. When, on the contrary, there are additional parts formed, as supernumerary arms or legs; these, he says, must be supplied by branches corresponding to the arteries natural to the part. In proof of this, he adduces the case [‡] of a monstrous kitten, in which there was an additional upper extremity protruding from under the chin, and an axillary artery was found creeping under the skin of the neck to supply its nutriment, and account for its existence.

It is for this reason, according to the same author, that a certain relation is observed in the formation of supernumerary parts, for which it would be otherwise difficult to account. We never see, says he, an additional head or arm protruding from the sacrum or pelvis, nor a supernumerary leg or part of the genital organs from the superior part of the trunk, because the artery on which the formation of such part depends, cannot take so long and unnatural a course. This, though perhaps the best argument in favour of the theory, is by no means well established. [§] That an artery will generally be absent, when the part to the nourishment of which it should be appropriated is wanting, is sufficiently probable; but it may well admit of doubt, whether the former deficiency be the cause or merely the effect of the latter, especially as we find the rudiments of many parts before there is any trace of a vascular system.

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[*] Philosophie Anatomique des Monstruosités Humaines, p. 474 à 541.

[†] Arch. Générales de Médecine, Tom. xvi. Mémoires du Museum de l'Hist. Nat. Tom. xiii.

[‡] Mémoires du Museum de l'Hist. Nat. Tom. xv. p. 420.

[§] A case scarcely reconcilable with this opinion is detailed in Tiedemann's Zeitschrift für Physiologie, Band. iii. p. 6.

Tiedemann,[*] proceeding on the hypothesis that the nervous system precedes and regulates the developement of the rest of the body, imagined that he had discovered the cause of monstrosity, in the defective or excessive developement of this system.[†]

This theory, however, is scarcely more tenable than that of M. Serres; for though the relation between the excessive and defective parts, and their nerves, as well as their arteries, generally holds, yet it is far from universal; and we have accordingly, sometimes entire absence of the brain and spinal marrow, with a body otherwise nearly perfect;[‡] at others, a cranium complete in all its parts, while the brain is absent,[§] as well as innumerable other examples of malformation quite inexplicable on these principles.[||] The remark of Cuvier,[¶] in an analysis of the work of M. Serres, is equally applicable to either opinion, "On sent qu'il reste toujours à se demander pourquois les artères se multiplient,"—and we fear the question must long remain unanswered.

But we leave these difficult questions of ultimate and proximate causes, to pursue what appears to us a more interesting part of the inquiry,—the laws by which the formation of monsters is regulated, and the possibility of submitting them to a strictly natural arrangement.

At the very commencement of the study of monstrosities, we are struck by the amazing variety of form they present,—by the apparent want of connection between their various parts,—and at times, by the absence of those very parts, the presence of which we have been taught to consider as essential to formation itself. To reduce these objects to a classification analogous to that under which we arrange the various grades of animal or vegetable life, and to adapt to these a scientific nomenclature, was a beautiful conception, worthy of the genius of St Hilaire. Greatly, however, as this would facilitate the study and increase our knowledge of the subject, and anxiously as we should therefore desire its accomplishment, we fear it can never be attained. Our reason for this opinion is founded on the belief, that the separate parts of the body do not in the monster, as in the natural animal, bear any certain and fixed relation to each other. To illustrate this, let us take St Hilaire's * definition of an anencephalous monster, "Point de cerveau ni de moelle épinière ; la face et tous les organes des sens dans l'état normal ; la boîte cérébrale ouverte vers la ligne médiane, et composée de deux moitiés renversées et écartées de chaque côté en ailes de pigeon." We have here a reference only to the form, number, and relation of the parts of the cranium and its contents ; but in what state are the other parts of the body ? In all cases agreeing with this definition they ought to be the same, or it ceases to possess the proper generic characters. Now, in one case of a monster of this kind, we may have the heart entirely wanting, and perhaps many other organs deficient ; in a second † the extremities are but imperfectly formed, while in a third ‡ the body is in other respects nearly natural. If, again, the heart, or any other part of the body, be taken to furnish the generic character, similar anomalies will constantly present themselves. In monsters presenting a greater number of parts than natural, these contradictions are still more evident ; and there is perhaps scarcely one of the divisions proposed by M. Isidore St Hilaire § in his arrangement of monsters of excess, to which many striking exceptions might not be easily opposed.

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[*] Arch. Gén. de Méd. Tom. xii. p. 614.

[†] Zeitschrift für Physiologie, 3er Theil, 1828.

[‡] Arch. Gén. de Méd. Tom. xx. p. 434, and MS. Catalogue of the Hunterian Museum, Glasgow, M. *m.* 8.

[§] Philos. Anat. des Monst. Humaines (Anencephalie) p. 88.

[||] Though unwilling to dwell at greater length on this part of the subject than is absolutely necessary, we cannot resist quoting a case related by Professor Mayer (Graefe und Walther's Journ. Tom. x. cah. 2.) of a heteradelphe monster, as it so completely contradicts the hypotheses both of Serres and Tiedemann. A fœtus of natural size was furnished with a parasite attached to the sternum, and consisting only of a *pelvis and well-formed lower extremities.* The blood by which the parasite was nourished, was entirely derived from the *internal mammary artery* of the principal fœtus, which afterwards dividing into two femorals, was distributed to the limbs. *There was no appearance whatsoever of a cerebro-spinal nervous system; the sciatic*, *crural*, and *obturator nerves were wanting*, and no filaments could be observed distributed to the muscles. A renal and mesenteric plexus sending off a small twig accompanying the crural artery, were the only parts of the nervous system which could be discovered.

[¶] Analyse des Travaux de l'Acad. Royale des Sciences, année 1825, p. 34.

The error into which these authors have fallen, seems to have arisen from believing too firmly, in the necessary connection and sympathy of different parts of the same body. Indissoluble and essential as this connection may be at a later period of existence, we are strongly inclined to think it does not exist during the formation of parts. Tiedemann, as we have seen, takes the nervous system, Serres the vascular, and each considers the perfection of this as necessary to the perfection of the whole, or

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* Philosophie Anatomique des Monst. Humaines, 1822, p. 88

† MS. Cat. of the Hunterian Museum, Glasgow, M. *m.* 15.

‡ Arch. Gén. de Méd. Tom. xx. p. 454.

§ Annales des Sciences Nat. Tom. p. 336.

of any part. The dissection of many monsters, has sufficiently proved neither of these systems indispensable. We find, on the contrary, the presence or absence of one part, even the most important, does not indicate the same state of any other; that an acephalous monster may possess a perfect heart,[*] and an acardious fœtus a nervous system perfectly natural;[†] that a monocephalous animal may have two hearts,[‡] while a bicephalous monster has but a single imperfect one.[§] The occurrence of instances like the one last quoted has led authors, as St Hilaire, Andral fils, and even Breschet,[||] to suppose that there exists a certain balance in the anormal formation of parts; that one part is developed in excess at the expence of some other, which must consequently exhibit a malformation of defect. Now, willing as we are to admit the force of this beautiful law in the gradations of animal life,—witness the kangaroo, the ostrich, &c. &c. or even in the after-growth of different parts of an individual body,—the arms of the blacksmith and head of the student, may perhaps lend weight to the opinion; yet we venture to deny, that any such relation can be made out in the developement of monstrosity. Many more instances might be adduced to controvert, than to confirm such an hypothesis. *There is then little sympathy, and no absolute connection, during formation, in the developement of different parts of the same body.*

These considerations have led us to believe that each system of organs, if not each individual organ, is formed independently of any other; that the body consists at first of a number of parts, each formed on its own type, as each possesses its peculiar irritability, and that they are united together only by the necessary connection of their separate functions, when these, as formation advances, are called into action. Take, for instance, a heart possessing but a single auricle and ventricle, while the rest of the body at birth presents a natural and healthy structure; this heart, though offering no impediment to formation during uterine life, is unable to perform its proper function after birth, and involves in disorder every part with which that function connects it,—in other words, the whole body,—and cyania is the result. It must not, however, be supposed that we maintain that a body can be formed without a vascular system of some kind; we only mean that it may vary in the form and number of its parts, without exercising a corresponding influence on any other part. Nor is the frequent occurrence of several malformations in the same body at the same time, any necessary proof of connection; the same cause, (be that what it may,) which produced derangement of developement in one organ, acting more generally, may produce a similar effect in others.

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[*] M. Breschet alludes to two cases of this description in the Dict. de Méd. Art. Acéphale, p. 272.

[†] Philos. Trans. 1809, Part I. p. 161.

[‡] Meckel, Dissertatio Inaug. de Cordis Conditionibus Abnormibus, Halle, 1802, p. 8.

[§] Catal. of Anat. Museum, University of Edinburgh. 2. G. 9.

[||] Dict. de Méd. Art. Déviations Organiques.

We should not have dwelt at such length on this proposition, but for the important inference which necessarily follows, *that a monster should not be described or classified as one connected whole, but that the malformation of each organ or system of organs should be considered separately, while the state of the rest of the body is noticed only incidentally.* It is on this plan, therefore, that we intend to proceed; and in spite of the great names opposed to us, we cannot but think that it is the only one which, at least in the present state of the science, we are justified in adopting.[*]

We are obliged, then, to reject a strictly natural classification, and our reasons for doing so have been already given; but as some arrangement is absolutely necessary, where so many objects are to be described, perhaps the one first proposed by Buffon is the best. It is equally applicable to any part as to the whole body, and has the singular merit of being unincumbered by hypothesis. It might be considered more philosophical to form an arrangement depending on the causes to which we attribute the error of formation, and this we should undoubtedly have preferred, were we not aware that scarcely any two authors would then agree, besides that it would probably require modifying, as often as any addition was made to our knowledge of the formation of the body. The arrangement we have adopted, classes monsters into those of defect,—those of excess,—and those of malposition. These we shall subdivide, as may be most convenient, under each particular head, without confining ourselves to any fixed principle, prefacing the description of each with an account, as far as we are able to determine it, of the mode in which we suppose it to be formed.

PART II.—MALFORMATIONS OF THE HEART.

Malformations[†] *of Defect.*

THERE is perhaps no fact better established in physiology, than that every organ in the body, in the course of its developement, passes through a regular and determinate series of changes, becoming gradually more complex in structure in proportion as the animal approaches its perfect state. It is moreover equally certain that many of the organs of the higher classes of animals, at an early period of their existence, present appearances analogous to those observed in the lower: that they go throw similar changes: exceeding them only in complexity and multiplicity of parts, as the one excels the other in the ultimate perfection of its form.

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[*] Since this paper was written, we have had an opportunity of seeing the April number for the present year, of the Archives Générales de Méd., containing an article by M. Breschet on the congenital malformations of arrestment of developement (or agénésie, as the author terms it,) of the brain. This article contains several facts, showing the independent formation of parts intimately connected, (as of the brain and skull,) and from its general tenor, we cannot help flattering ourselves that we shall have the concurrence of so high an authority as M. Breschet, in the opinion expressed above.

[†] For those unaccustomed to the study of these subjects, it may be necessary to

This being determined, it requires no great stretch of imagination to conceive, that if the evolution of a part be impeded in any one of these changes, if the "*nisus formativus*" be at any time checked in its operation, we shall have a malformation exhibiting some of the characters proper to the period at which this has occurred. In some of these, we have presented forms natural only to the adult in lower classes of animals; in some, the persistence of parts adapted only to the fœtal state of existence; while in others, there is simply an absence or imperfection of some of the parts necessary to constitute the perfect organ. This theory of "retardment," or "arrestment of developement," which, without pretending to account for monstrosity, only attempts to point out the manner in which it sometimes takes place, was first prosecuted, if not first proposed, * by Meckel, and has been since more fully illustrated by Sœmmering, Tiedemann, and Mayer, by St Hilaire, Serres, Beclard, Breschet, Chaussier, Adelon, Andral fils, and many others in France. Almost all the malformations of defect † are referable to this principle, and those of the heart in particular afford striking illustrations of it.

To understand the application of this principle to the examples we shall bring forward, some previous knowledge of the developement of the vascular system is absolutely necessary; and as it is a subject to which, in this country, comparatively little attention has been directed, we shall subjoin a short analysis of

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define what we mean by the term *malformation*. The fœtus during gestation is subject to two distinct species of organic derangement; the one having relation to *dimension and structure*, the other only to the *form*, *number*, *and connection* of its parts. The former is congenital disease, the latter congenital malformation. The heart of the fœtus may undergo hypertrophy or ramollissement; it is then diseased; it may have the *foramen ovale* open, it may be double, or it may be placed in the abdomen; it is then said to be malformed.

* In the Dictionaire de Médecine, article "Monstruosité," the credit of having first suggested the idea is given to Littre in 1700; as, however, nothing was then known of progressive developement, it could have been only a suggestion; and the merit of having first applied it, must be yielded to Meckel.

† Some of those of excess and malposition acknowledge a similar cause. We shall speak of them hereafter.

its history. In doing this, we shall confine ourselves to the formation of the heart and great vessels in the vertebrated animals; for though we are inclined to admit that the invertebrate observe the same general laws, yet their structure presents so many apparent anomalies, and their fœtal organization is so little understood, that we can scarcely trace in them the same common laws of formation.

The simplest state in which the vascular system exists is, according to M. Serres,* double. Like the nervous system and other parts of the body, it is formed from the circumference to the centre, † and becomes united by what has been called the law of conjunction. Thus the aorta is at first composed of two separate vessels lying on each side and below the spinal marrow, which are continued from the umbilical or omphalo-mesenteric arteries. These approximating first in the dorsal region, gradually unite as they descend, and at last form one continuous trunk. In the upper part of the body, the arrangement is more complex. ‡ At a very early period the bulb of the aorta, as the vessel continuous with the heart is then named, divides into five pairs of vessels, which pass back to certain fissures in the sides of the œsophagus, called branchial clefts, as the vessels passing to them are called branchial arteries, from the close analogy they bear to the structure of the adult fish, or the young of the *Batrachiæ*. Each of these vessels opens posteriorly, into the two vessels we have mentioned as lying along the spine, and which never unite higher than the middle of the dorsal region. The upper ones of these branchial arteries, undergo nearly the same changes as the vessels of the tadpole when its *branchiæ* become obliterated; and the vascular system of this animal bears a very close analogy to that of the fœtus of mammalia, at this early period. The first pair of vascular arches become the carotids; the second and third are said to unite to form the subclavians; the fourth constitute the aortæ, (permanently double in reptiles as far as the middle of the dorsal region;) while the fifth form the pulmonary arteries. In birds the arch of the aorta is single, and is formed by the fourth vessel on the right side; in mammalia, on the contrary, the fourth on the left side constitutes the aortic arch.

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* Anatomie Transcendante, par M. Serres, Annales des Sciences Nat. T. xxi. (1830.)

† Some of the German anatomists strenuously deny this theory of formation. Baer gives as one of the conclusions at the end of his epistle on the formation of the egg, &c. that "all evolution proceeds from the centre to the periphery. It follows, therefore, that the central parts are formed before those of the circumference." Rép. Gén. d'Anat. Tom. vii. p. 189.

‡ Dr A. Thomson on the Developement of the vascular system in the fœtus of Vertebrated Animals, part 2d. Edin. New Phil. Journal, January 1831; and the translations of the writings of Baer and Rathke on Fœtal Developement in the Repertoire Generale d'Anatomie, &c. Tomes vi. vii. and viii.

The *ductus arteriosus*, or *ductus Botalli* of continental authors, is formed by the persistence of the communication between the fifth arch or pulmonary artery and the systemic aorta. In the turtle and many other reptiles, this communication remains open on both sides through life; in birds it has been clearly seen on the right side; and in mammalia there can be little doubt that it is formed on the left in a similar manner. On this point, however, there has been some difference of opinion. Meckel,* and in this he has been followed by Dr Allen Thomson, † supposes it to be formed by the division of the bulb of the aorta into the pulmonary artery and aorta proper, when a small channel of communication is left in the upper part, which gradually elongates to form a vessel. Some curious malformations of the aorta first led me to question this opinion, and my doubts were strengthened by considering the function attributed to the *ductus arteriosus* by Kilian; ‡ that of carrying on the whole circulation during fœtal life to the lower part of the body, by means of its direct communication with the *aorta descendens*. §

The same law, as to original duplicity, is observed in the formation of the great single veins. The *vena cava*, superior and inferior, are at first both double; and, as with the arteries, we find this structure permanent in certain animals. In the elephant there are two *venæ cavæ superiores*. The same structure is observed in many birds, and in some the inferior cava is also double. In the *Sauria* both these appearances are constant. Kilian, ‖ (who wrote before the publication of M. Serres' discovery,) in speaking of the *vena cava inferior*, describes it as a single vessel ending in two very short branches, opening separately one into the right, the other into the left auricle; the *foramen ovale*, which is the orifice of the left branch, thus forming, only secondarily, a communication between the two auricles. The discovery of Serres, ¶ which we shall sum up in his own words, tends to confirm the opinion advanced by Kilian: "En

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* Mémoire sur l'Histoire du Développement du Cœur, &c. Journal Compl. Tome i. p. 259.

† Edinb. New Phil. Journal, Jan. 1831, p. 75.

‡ Ueber den Kreislauf des Blutes im Kinde welches noch nicht geathmet hat. Karlsruhe, 1826, and Arch. Gén. de Méd. T. xvi.

§ We have been glad to find that Dr Allen Thomson has since confirmed this opinion, and corrected the error, in a note to the last part of his valuable paper. He has been able to trace the communication in the early fœtus of several mammalia. We cannot neglect this opportunity of returning our thanks to Dr A. Thomson for the kind assistance we have received from him, in the course of our inquiries on this subject.

‖ Arch. Gén. de Méd. T. xvi. p. 564.

¶ Annales des Sciences Naturelles, T. xxi. p. 20.

définitive, tout artère médiane et unique est primitivement double: cette dualité artérielle tend à l'unité en marchant de dehors en dedans, et arrive à ce terme par une série de transformations que j'ai comprises sous les trois régles dites *loi de formation de la circonférence au centre, loi de symétrie, et loi de conjugaison.*"

Thus, in the formation of vessels, multiplicity leads to unity. In the heart, on the contrary, unity leads to multiplicity; for in each of its changes it progressively increases in the number and complexity of its parts.

The simplest state in which the heart has been described in vertebrate animals is by Rathké * in the fish, when he says it is first observed as a small reniform body, speedily becoming a sac, pointed at both ends, and soon forming a simple enlarged tube, continuous with the great vascular trunks. This tube next assumes a slightly convoluted figure, and dividing into two parts, forms the single auricle and ventricle natural to the adult heart in this class of animals.

In mammalia the heart has never been seen in the state of a simple sac or straight tube, though we can have but little doubt that it does pass through these primary forms, since it has been seen in this state both in reptiles and birds, and since in every other respect, the heart of mammalia obeys the same laws of formation as that of other animals.

The earliest period at which it has been observed is by Baer † in the dog at the twenty-first day, when it consists of a membranous tube, twisted on itself, and slightly divided by a notch on its surface into two cavities, an auricle, receiving the two *venæ cavæ,* and a ventricle, giving off the bulb of the aorta; a form nearly analogous to that of the fish at term, or of the chick about the sixtieth hour. The next change is the formation of the septum of the ventricles, which commences at the anterior and upper side of the common cavity, and is last formed at the openings of the auricles, at the bulb of the aorta, and at the posterior part; where Meckel says they communicate in the human embryo till the eighth week. Synchronous with the separation of the ventricles, a notch is observed to form on their outer surface, rendering the apex bifid; and in this state it is said by the same author, to continue to the tenth week. About the same time, the division of the bulb of the aorta commences at the lower part and proceeds upwards, forming two vessels, the root of the pulmonary artery, and ascending portion of the systemic aorta. The inter-auricular septum is somewhat later in its appearance; and, of course, is not perfect till after birth, when the valve of the *foramen ovale* is fully formed.

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* Dr A. Thomson, Ed. New Phil. Journal for Oct. 1830, p. 16.

† De Ovi Mammalium et Hominis Genesi Epist. &c. a Baer, 1827. p. 3. And Rep. Gen. d'Anat. &c. p. 160, Tome vii.

Of the formation of the pulmonary veins, nothing appears to have been observed.

At what period the pericardium shows itself, or how it is formed we have been unable to learn. Rathké [*] observed it in the embryo of the pig at three weeks; and Baer [†] in the case already quoted says, "In nostro fœtu præter cuticulam pectus tegentem jam tenerrimum pericardium adest, quod ante atrium et ventriculum distinguitur." Rathké [‡] describes it also as present in the chick on the third day. It is developed, therefore, at a very early period, and is probably formed by a fold of the common serous layer of the germinal membrane.

There are some circumstances in the locality of the heart, which require notice. At the earliest period, the heart as well as the rudiments of the abdominal viscera are uncovered, the parietes of the thorax and abdomen being yet unformed. During the progress of developement, the heart seems to undergo certain changes in situation, and the embyro itself makes a movement to one side. [§] This has been chiefly observed in birds, but seems to be little understood. The heart in the early human fœtus is said by Meckel [||] to be placed symmetrically in the thorax, and to retain that situation till the ninth week, when he first observed it to incline to the left side.

To enter further into the history of the developement of the vascular system, would lead us too far away from our subject. We must content ourselves, therefore, with referring those curious in the inquiry, to the works of Meckel, Pander, Baer, Rathké, Serres, Kilian, and Allen Thomson, while we proceed with the consideration of the malformations of defect.

Acardia, or total absence of the heart, is a case of comparatively rare occurrence, and is generally found only in conjunction with absence of the brain or the upper half of the body. Examples of this kind have been recorded by Hunter.[¶] Winslow,[**] Mery,[††] Le Cat,[‡‡] Meckel,[§§] Lawrence,[||||] Tiedemann,[¶¶]

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[*] Memoire sur le Developpement des Organes de la Respiration, &c. Par le Professeur Rathke, Repertoire Gen. d'Anat. Tome vii. p. 32.

[†] Op. et loc. cit. et Rep. Gen. Tome vii. p. 160.

[‡] Rép. Gén. Tome vii. p. 16.

[§] Edinb. New Phil. Journal, Oct. 1830, p. 22; and Histoire du Développement des Animaux, par Baer, Répert. Gén. d'Anat. T. viii. p. 93.

[||] Journal Complém. Tome i. p. 269.

[¶] Dr Hunter's Anatomical Museum contains two cases.

[**] Hist. de l'Acad. Royale des Sciences, 1740.

[††] Ibid. 1720.

[‡‡] Phil. Trans. for 1767.

[§§] Handbuch der Pathologischen Anatomie, Band i. p. 414.

[||||] Med. Chirurg. Trans. Vol. v. p. 168.

[¶¶] Anat. der Kopflosen Missgeburten, 1813.

and Elben,[*] not to mention a number of older authors, whose testimony might be thought less worthy of credit. It may be observed, that in almost all these cases there were twins, one of which was in general naturally formed. In these monsters many other parts besides the brain and heart are often defective, especially the liver and stomach. There are, however, at least two cases, the authenticity of which cannot be doubted, where the nervous system was found quite natural; the one was seen by Marrigues[†] in 1757, and the other by Brodie[‡] in 1809. In the former, the chest was filled with watery fluid; the lungs, liver, stomach, spleen, kidneys, and genito-urinary organs were wanting. They were not able to trace any vascular system. In the latter, there was likewise a cyst filled with water distending the skin at the posterior part of the neck and thorax, and some of the organs were also deficient; but it is the arrangement of the vessels, which has been accurately described, that particularly deserves notice. The umbilical chord consisted of one artery and vein. "The artery passed to the left groin by the side of the urachus, occupying the usual situation of the left umbilical artery. Here it gave off the external and internal iliac arteries of the left side, and was then continued upwards on the fore part of the spine, forming the aorta. From the aorta rose the common trunk of the right iliac artery, and the branches to the viscera and parietes of the thorax and abdomen. At the upper part of the thorax it sent off the two subclavian, and afterwards divided into the two carotid arteries, without forming an arch. The veins corresponding to these arteries terminated in the *vena cava*, which was situated on the anterior part of the spine, before the aorta, and passed downwards before the right kidney to the left groin. Here it became reflected upwards by the side of the urachus to the navel, and was continued into the larger vessel or vein of the cord." There was here no communication between the arteries and veins, except in the capillary vessels, and in the placenta. Is it not possible to trace some analogy between this arrangement, and that observed in some of the invertebrate animals?

The nearest approach to this in simplicity of form, is a malformation described by Wilson.[§] It was found in a child of seven days old, whose functions seem to have been comparatively little disturbed. The heart, imbedded in the substance of the liver and protruding like a tumour from the abdomen, with only a thin membranous covering to protect it, was found to consist of but one ventricle and one auricle; from the former of which arose the aorta, giving off in its course one branch to form the *aorta descendens*, and another to supply the place of the pulmonary artery. The blood was returned from the lungs by two veins joining the *vena cava superior*, and opening into the auricle with it. The form of this heart is nearly allied to the perfect structure of the organ in fishes,—the distribution of its vessels similar to that of the *Batrachia*,—while in locality, this heart bears a close analogy to that of the *Chelonia*, and some of the *Sauria*.* A case strongly resembling this is recorded by Mr Standert,† and another by Dr Farre.‡ In the former it is said, "the aorta sent off an artery from the situation of the *ductus arteriosus*, which divided into two branches, supplying each mass of the lungs;" while in the latter, there were two pulmonary arteries, the first branches given off by the aorta. Another example of this structure is afforded by the heteradelphe monster described by Professor Mayer,§ which has already furnished us such powerful arguments against the hypotheses of Tiedemann and Serres, and in favour of independent formation. Dr Ramsbotham has recently added another to this already ample list.‖

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[*] De Acephalis sive Monstris Corde carentibus Dissertatio, &c. Berolini, 1821. The two cases we are about to quote sufficiently disprove the connexion which the title of this work declares that the author must have supposed absolute.

[†] Mem. de Mathem. presentés à l'Acad. Royale des Sciences, T. iv. p. 123, and 129. Daniel, Col. Op. Med. Leipsig, 1776, p. 276, and Rép. Gén. d'Anat. &c. T. ii. p. 3, note.

[‡] Phil. Trans. for 1809, p. 161.

[§] Phil. Trans. for 1798, p. 346.

Advancing a step further in developement, we sometimes meet with a single ventricle furnished with two auricles, occasionally only imperfectly divided. An instance of this was seen by Wolf,¶ a second by Farre,** and two others by Breschet.†† In the first of these, the subject had attained the age of twenty-two years. In the second, the aorta and pulmonary artery were both present, but arose "side by side" from the common cavity. This arrangement is, in many respects, similar to that which prevails in certain of the *Chelonia*. One of the cases described by Breschet, might almost be considered as belonging to the same class as that recorded by Wilson, as there were no traces of an auricular septum; but it was distinguished, by possessing an auricular appendage on each side, showing the rudiments of a heart formed on the double type of mammalia, while, in the former, the single structure of the fish was observed.

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* Cuvier, Leçons d'Anatomie Comparée, T. iv. p. 217 to 226.

† Phil. Trans. for 1805, p. 228.

‡ Essay on the Malformations of the Human Heart, 1814, p. 2.

§ Graefe und Walther's Journ. T. x, cah. 3. Arch. Gén. de Méd. T. xvii. p. 578.

‖ London Medical and Phys. Journal, Vol. lxi. p. 548.

¶ Kreysig, die Krankheiten des Herzens, Band iii. p. 200.

** On Malformations of the Heart, p. 30.

†† Rép. Gén. d'Anat. &c. T. ii. p. 8 and 11.

Imperfection in the septum of the ventricles is the next malformation, reckoning in the order, in which the parts are formed. This is a case of pretty frequent occurrence, instances of it being mentioned by Corvisart, Baillie, Meckel, and Louis, and our medical periodicals daily recording examples of a similar kind. The opening is generally found to occur in one of three situations;—between the origins of the aorta and pulmonary artery,—under the mitral valve,—or at the base of the heart; the parts which we have previously described as last formed, and which are therefore, according to a well known law in anormal formation, most subject to arrestment of developement. This again is a structure, the repetition of which is frequent in lower animals.

A near approach to this malformation is one noticed by Mr Spittal, to whom I am indebted for the communication of it. This gentleman in two cases, remarked a failure of the muscular substance in the septum of the ventricles, for a small space between the roots of the great arteries; the ventricles being still without communication, since the transparent lining membrane of the cavities extended over the defective part, and preserved them separate and distinct.

It will be most convenient in this place, to notice the malformations of the aorta and pulmonary artery, as they are generally connected with similar affections of the ventricles, and often seem to depend on, or even to determine them. We have already noticed one case,* in which the aorta and pulmonary artery arose near each other; this structure is sometimes so marked, as to give the appearance of one common origin for both. This malformation is easily explained, by considering that at first, these vessels are only separated by the division of the bulb of the aorta, which process, in such cases, has not been perfected at the lower part.

The origin of the aorta † from both ventricles, has been pretty frequently observed, and generally in conjunction, with imperfection of the *septum ventriculorum.* ‡ The pulmonary artery in some of these cases rises as usual from the right ventricle, and preserves its healthy structure; but it is more common to find it attended by another alteration, first noticed by Dr Hunter,* a diminution of the size of the pulmonary artery. The cause of this, may be either simple contraction of its orifice, as in most of the instances on record; the union of the semilunar valves; † or the growth of a tumour within the vessel itself. Of the latter description, there is a preparation in Dr Macartney's splendid Museum of morbid anatomy, in the University of Dublin. The two latter of these deviations at least, depend on structural derangement; the union of the valves, perhaps on inflammation; the tumour, on morbid growth; and both are therefore congenital diseases, noticed here, only as frequent concomitants, and perhaps causes of the malformation. In most of these cases, another part of the fœtal structure is also preserved, the *ductus arteriosus* remaining open, and thus allowing an additional small quantity of blood to enter the pulmonary circulation by a retrograde movement.

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* Farre, Op. Cit. p. 30.

† Andral, in his Anatomie Pathologique (T. ii. p 376,) states that the aorta may rise from both ventricles, under three circumstances, 1*st*, When the interventricular septum is deficient; 2*dly*, When it deviates from its usual situation; and 3*dly*, When "il existe un canal accidentel qui fait communiquer médiatement le ventricule droit avec l'aorte." Andral has not quoted his authorities, and I do not know of any case in confirmation of this last means of communication.

‡ Observations on Diseases of the Heart, by A. Burns, p 13, Sandifort. Obs. Anat. Pathol. &c. &c. &c.

The *ductus arteriosus* is subject to some important organic deviations. The one just mentioned is frequently met with, both alone, and in conjunction with other malformations. In a case related and figured by Tiedemann, ‡ the open duct is seen entering the *aorta descendens*, at some distance below the situation at which the left subclavian artery is given off. In another case, § it was observed opening into the left subclavian; a case in itself sufficient to disprove the opinion advanced by Meckel as to its origin, but easily explicable, when we consider it as a remnant of the fifth branchial arch.

In a case which lately occurred in St George's Hospital, London, || instead of a *ductus arteriosus*, a direct opening is said to have existed between the pulmonary artery, and arch of the aorta, just beyond the origin of the left subclavian artery. "The *ductus arteriosus* in the natural situation was deficient." The patient died at the age of twenty, with all the symptoms of disease of the heart, some of which appear to have been congenital. This is the only malformation, which in any degree, appears to support the opinion of Meckel just alluded to; but though we have quoted it as we find it recorded, we are much inclined to doubt the reporter's interpretation of it. We should rather consider it, as simply a shortening of the arterial duct, espe-

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* Med. Observ. and Inquiries, Vol. vi. p 291.

† Morgagni de sed. et caus. Morborum, Epist. xvii. Art. 12.

‡ Zeitschrift für Physiologie, b. i. p 111, Tab. vii. Fig. 9.

§ Arch. Gén. de Méd. T. iii. p 340.

|| Johnson's Medico-Chirurgical Review, for Dec. 1830. No. xxvii. p. 231.

cially as no remains of it were to be observed in any other situation. Farre[*] saw a case approaching to this in the Museum of Mr Langstaff, where the *ductus arteriosus*, though pervious, was remarkably short and small.

Howship[†] has related a case, where the *ductus arteriosus* remained open, and constituted the trunk of the pulmonary artery. The pulmonary artery proper, took its origin in its usual situation, but was quite impervious at its root, though free beyond, and terminated in a *cul-de-sac* beside the heart. Farre[‡] describes and figures an example of a nearly similar nature, having the pulmonary artery impervious as far as its bifurcation, and its place, as before, supplied by the arterial duct. The *ductus arteriosus* must have performed a similar office, in a preparation preserved in the Museum of the Edinburgh College of Surgeons, where the pulmonary artery is in like manner obliterated, and both ventricles communicate under the origin of the aorta. In the same museum is another case, in many respects similar to the last; but that the pulmonary artery was only contracted, not closed, and the *ductus arteriosus*, therefore, less patent than in the former. In these cases, then, the *ductus arteriosus* has supplied the place of the defective pulmonary artery; in those we are about to relate, it performs the office of the *aorta descendens*, as in the fœtus.

Sir A. Cooper,[§] met with two instances, in which the aorta, after giving off the three great vessels to the head and upper extremities, terminated in a very small branch joining the *aorta descendens*; this latter vessel, was formed by a branch of the pulmonary artery, following the course natural to the *ductus arteriosus*. In both cases, the root of the pulmonary artery communicated with each ventricle.

A still more perfect example, of a nearly similar kind, has been published by Steidele.[‖] Here, however, the aorta and pulmonary artery rose as usual. The aorta was entirely distributed to the head and upper extremities, while the pulmonary artery, after giving off two branches to the lungs, continued as the *aorta descendens*, without any communication with the *aorta ascendens*. It is almost unnecessary to remark, how strongly this supports Kilian's opinion respecting the function of the pulmonary artery during fœtation, (viz. that of carrying on through the *ductus arteriosus* the whole circulation to the lower extremities,) as well as our suggestion, as to the origin of this vessel.

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[*] Farre, Op. Cit. p. 19.

[†] Edin. Méd. and Surg. Journal, Vol. ix. p. 399, and another by Breschet in the Rép. Gén. d'Anat. T. iii. p. 8.

[‡] Farre, Op. Cit. p. 27, Fig. 13.

[§] Farre, Op. Cit. p. 14, Fig. 5 to 10.

[‖] Sammlung Chirurgischer Beobachtungen, b. ii. p. 114.

We now come to the malformations of the auricles, and the parts immediately connected with them.

The existence of only one auricle when the ventricles were double, has been noticed by Haller, * and similar cases have been more recently seen by Ring † and others. It is curious, that in the case dissected by Haller, as well as in one which lately occurred in France, ‡ the subject of this malformation was a heteradelphe monster, united only by the epigastria, and in whom almost all the other organs were double. In Ring's case, the *vena cava inferior* opened into the left part of the common auricle, while each side possessed a *cava superior*.

Communications take place between the auricles, in two different ways,—by imperfection of the septum, properly so called, or by the persistence of the *foramen ovale*. An instance of the first kind, has been observed by Lawrence and Farre, § in which the septum, consisting only of a muscular band, crossed from one auricle to the other. Another case is recorded by Walter, ‖ where there were two foramina in the septum, one formed by the *foramen ovale*, the other by a true imperfection of a part of its walls. In the extensive Museum of the College of Surgeons of Edinburgh, another specimen is preserved, showing two foramina in the auricular septum.

The open state of the *foramen ovale* is one of the malformations first noticed, and one on which the older physiologists used to amuse and confuse themselves, with a thousand idle theories, now almost forgotten. This, and the open *ductus arteriosus*, may be cited as the best examples, of the persistence of parts adapted only to fœtal existence. It may arise, either from absence of the valve, from non-union of the sides of the valve, or from perforation of the valve by several small foramina, ¶ and is so common in one or other of these forms, that every morbid anatomist must have met with it. In extent, it admits of great variety; Corvisart** mentions a dissection, in which he found the foramen more than an inch in diameter, while in others, it is scarcely a line.

A still more complicated malformation, is produced by the imperfection of the septa at the point of general union, in which case all the cavities communicate freely with each other. Such an occurrence is recorded by M. Thibert.[*] The patient lived to the age of twenty-four years.

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* Haller de Monstris, lib. i. cap. 29.

† Med. and Phys. Journal, Vol. xiii. p. 120.

‡ Arch. Gén. de Méd. T. xxii. p. 259.

§ Farre, Op. Cit. p. 30.

‖ Walter, Observ. Anat. folio, p. 8.

¶ Catalogue of the Preparations in the Anat. Museum of Guy's Hospital, by Dr Hodgkin. 1829. No. 1386.

** Corvisart, Traité sur les Maladies de Cœur, ed. 2d, Paris, p. 284.

The valves, also, of the heart and its great vessels may be defective, either partially or totally. This most frequently happens in the sigmoid valves of the pulmonary artery, especially in conjunction with contraction of its orifice. Andral[†] states, that the aorta is occasionally furnished with only two valves; and I have been lately shown a case of the kind by Mr Spittal.[‡] Mayo[§] has placed another on record. In the mitral and tricuspid valves the same deficiency sometimes occurs, several instances of which have fallen under my own observation. Meckel[||] refers likewise to some cases of absence or defect in the Eustachian valve, probably not an uncommon occurrence. All the valves, like that of the *foramen ovale*, are frequently pierced with a number of small foramina. As little notice has been directed to the formation of the valves, it is difficult to trace all their malformations to arrestment of developement; but in the preparation preserved by Mr Spittal, two of the sacs appeared continued into one, from the failure of the part by which the free edge of the valve is usually bound down to the side of the aorta.

In external form, the heart is rarely much changed, except as the effect of chronic disease. It does, however, sometimes preserve its fœtal character in this respect. The most common of these deviations, is the persistence of the shape observed at the seventh month, when the two ventricles are of an equal size and thickness, and the apex is rounded or flat. I think I have seen this structure, in more instances than one, when quite unconnected with organic disease. An extraordinary case is recorded by Bartholinus,[¶] in which the heart is said to have been bifid at the apex, "Mucrone non acuto, ut fieri solet, sed bifido," thus presenting the appearance, which has been already noticed as prevailing in the fœtus till the tenth week. We are inclined to consider, as similar to this, a case quoted by Ignatius de Torres * from Amorosius, though it is scarcely related with the minuteness we could wish. He is said to have observed "a heart with two points, which on the outside showed the two ventricles." These cases are rendered the more interesting by the circumstance, that the bifid apex, is a form natural to the heart of some of the mammalia. The heart of the Dugong, a specimen of which I had lately an opportunity of examining in Dr Knox's museum, affords a fine example of it. The repetition of this structure in mammalia, together with the late period to which it continues in the human fœtus, would lead us to expect the occurrence of this malformation much more frequently; but we know of no other cases on record.

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[*] Bulletin de la Faculté de Méd. année 1819.

[†] Andral, Anat. Patholog. T. ii. p. 377

[‡] A Treatise on Auscultation, by R. Spittal. Edin. 1830.

[§] Mayo's Elements of Physiology.

[||] Meckel, Dissert. Inaug. de Cordis Conditionibus Abnorm. p. 29.

[¶] From the rarity of this case, and the uncertainty always attached to cases of monstrosity recorded by the older anatomists, I subjoin the whole history in the words of Bartholinus.—Cor Bifidum.—Christophorus Giòe, vir nobilissimus, provecta ætate rerum rariorum erat amantissimus, et secretis medicinæ apprimé deditus. Inter alia singularia quæ humanissimis suis colloquiis nonnunquam interspergebat narravit mihi, in Norwegia pridem a se visum latronem qui pœnas scelerum luebat. Quum exenteraretur a carnifice, cor habuisse singularis figuræ, mucrone non acuto, ut fieri solet, sed bifido ut distincti ventriculi manifestius externa facie apparuerint dexter nempe et sinister, interjecto hiatu.—Thomæ Bartholini, Historiarum Anatomicarum Centuria i. et ii. Hafniæ, 1654, 8vo. Cent. i. Hist. 67, p. 117.

Absence of the pericardium, cases of which have been frequently mentioned by the older writers, was, by the more modern sceptics in philosophy, considered never to occur, except when connected with malposition of the heart, till its possibility was fully established by Breschet. † The case related by this author, evidently depended on arrestment of developement, for rudiments of the pericardium, in the form of several folds and fibrous bands, were present, and marked the commencement of its formation. The heart was covered by a continuous layer of the pleura, and it is probably only a reflection of this membrane, subsequently thickened, in which it was deficient. Undoubtedly many of the cases formerly recorded, as of defective pericardium, were only adhesions between this membrane and the heart, the effect of pericarditis. From the early formation of the pericardium, it is not probable that this malformation frequently occurs. Haller says that none of the inferior animals which possess a heart, want the pericardium. ‡

Malformations of Excess.

The mode of formation of monsters of excess, is a question which is still concealed in the greatest obscurity. The absurdities which our older writers were guilty of, the freedom in which they indulged their fancy on this subject, can scarcely surpass in wildness, the theories by which some of our more recent philosophers have thought to illustrate the question. This, however, must be attributed in a great measure, to the very nature of the subject itself. When such men as Meckel, Burdach, St Hilaire, Mayer, and Breschet, have all failed in their attempts to penetrate the darkness that hangs around it, the task must be confessed one of no ordinary difficulty. The causes on which such malformations depend, must, we fear, remain unknown, till chance shall throw in the way of some skilful anatomist a monster of excess in the very earliest stage of its formation; many doubtful points might then be cleared up, and more certain data established for the foundation of our future reasonings.

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* Phil. Trans. abr. Vol. viii. p. 508.

† Répért Gén. d'Anat. &c. T. i. p. 67.

‡ In the MS. catalogue of the Hunterian Museum of Glasgow, (M. m. No. 19.) a preparation is described as wanting the anterior parts of the abdominal parietes, and consequently exhibiting a hernia of the viscera, in which the apex of the heart is said to be attached to the anterior edge of the diaphragm. This probably refers to a case similar in some respects, to the one just quoted from Breschet. I was anxious to assure myself of this fact by personal examination, but have been unable to accomplish it, either because the preparation is lost, or, as is more likely, concealed by the very defective manner in which this fine museum is arranged.

The most prevalent opinion as to their mode of formation, is that which attributes them to the attachment and union of two fœtuses, at a very early period of uterine life. As far as regards monsters of inclusion, where one fœtus is enclosed within the abdomen, or contained in a bag dependant from the perineum of another, we are inclined to think this principle may be true; but how it can act in producing an additional finger, a supernumerary heart, or double lower extremities, we confess we cannot see. It will be at once urged, that these cases depend on totally different causes; that the additional finger owes its origin to an increase of the nutritive energy merely; the double extremities only, to the approximation of two embryos, which, say they, by the pressure exerted on each other, have produced, as it were, a fusion of the two bodies, so that the upper extremities of only one are developed, though the lower ones of both are formed. Plausible as this may appear at first sight, a great difficulty presents itself on a moment's consideration,—where is the principle of increased nutritive action to cease,—where that of double generation to commence? for the series of gradual increase in the number and importance of additional parts, from the supernumerary auricle or ventricle to the double body of the Siamese twins, is continued in an almost unbroken chain. If we begin at the additional finger or toe, we may progressively ascend to the third eye,* the double upper and lower jaw,† the two hearts,‡ the organs of generation proper to both sexes in one body,§ the additional, though imperfect, lower extremities,[*] the two heads and necks with the body single, [†] the whole upper half of the body double,[‡] two bodies attached by their bellies and chests, [§] two others adherent by the pelvis, in which the anus was the only part common to both, [||] till at last we reach the Siamese twins, in which the junction of two perfect bodies was formed only by a cartilaginous band. To give credence to a theory which presents so many anomalies is impossible; and to propose a new one, would be to incur almost the certainty of a failure. We may, however, venture to suggest, that by following up the doctrine of the independent formation of parts, as laid down in the former part of this essay, some of the difficulties of this subject may be removed. Let it be granted, that every organ or part is formed on its own type independently of every other part, and then suppose, that this may be double with respect to a system of organs, a single organ, or even one of its parts, and we shall find many of the phenomena of malformations of excess comparatively easy of explanation. On this view of the question, it is no longer necessary to consider an additional valve the only remaining part of a second heart, any more than to suppose, that three posterior extremities where the head is single, must necessarily have belonged to three individual fœtuses. It has been already shown, that the body may be formed when a heart or brain is wanting. What is there then more extraordinary, in the formation of a second heart or brain when the body is only single? To say on what this tendency to original duplicity depends, we do not attempt; to generalize a certain number of determined facts, must content us for the present.

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* Cat. of Anat. Mus. of Univ. of Edin. p. 245. "Chicken with one cranium, three eyes, and two bills. 2. G. 18."

† Op. et Loc. Cit. "Kitten with one head, and two upper and under jaws. Rest of body natural." 2 G. 13.

‡ Meckel, Dissert. Inaug. de Cordis, &c. p. 8. In the goose.

§ Cat. of Anat. Mus. of Guy's Hospital, by Dr Hodgkin. Observations to Section XI. of Part II. "The nearest approach to a true hermaphrodite with which

The varieties of malformation of excess exhibited by the heart, are by no means all referrible, to the same law of formation;

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the author is acquainted, occurred in an ourang outang, dissected, described, and delineated by Doctors Harlan, Morton, and Bird, of Philadelphia. It is stated to have possessed ovaries, Fallopian tubes, a uterus, and vagina; and also testes, epididymes, vasa-deferentia, and a highly-erectile penis."

[*] Annales des Sciences Nat. T. xxi. p. 333. Mémoire sur un enfant quadrupède, né et vivant à Paris, monstruosité determinée sous le nom générique *d'Ileadelphe*; par M. Geoffroy Saint-Hilaire.

[†] Cat. of Anat. Mus. of Guy's Hospital. " A fœtus at or near the full period, with two heads and necks." No. 2548.

[‡] Annales des Sciences Nat. T. xix. p. 153. Sur la fille Bicéphale Rita-Christina, par M. le Docteur Martin de Saint-Ange.

[§] Cat. of Anat. Museum of Guy's Hospital. " Two male fœtuses, apparently at or near the full period; they are united by a considerable portion of their bellies and chests, and have a common umbilical cord." No. 2547.

[||] See Dict. des Sciences Med. Art. Monstruosité, in which Buffon's celebrated monster Helen and Judith is described. This, or these girls, (for we know not in which number to speak) lived to the age of twenty-one. They were found to possess a very intimate vascular connection, by means of the aortæ and venæ cavæ at their bifurcation.

for though they all present some excess in the number or form of its parts, it is almost the only character in which they agree. There are three causes, under which we think all these malformations may be included, and we shall accordingly arrange them into three classes, distinguished by the different mode of formation to which we believe each attributable. The first depends on arrestment of developement, and includes all cases of increase in the number of the great vascular trunks; the second on congenital hypertrophy, exhibiting itself in additional parts not natural to the organ; and the third, on the tendency to double formation, which may manifest itself in the duplicity of the whole organ or some of its parts only.

Arrestment of Developement.—We have already spoken at some length on the principle of arrestment of developement, on which our first division depends. As with the malformations of defect, these also show strong evidence of the existence of this beautiful law; for we find the vessels, which in their natural state form the great azygos trunks, still presenting either partially, or through their whole extent, their primitive double state; while in others, we observe the permanence of some of the lower branchial arches, constituting varieties in the arch of the aorta and *ductus arteriosus.*[*]

Of the first of these cases, the *venæ cavæ* afford some of the best illustrations. The *cava superior* has been found double by Ring [†], Meckel [‡], Bœhmer [§], Murray [||], Breschet [¶], and many others; indeed, it may be reckoned among the malformations of most frequent occurrence. In the *vena cava inferior*, Kerkring [**] describes a deviation, in which the vein was bifid as high as the liver, where it united, but again divided, and formed two trunks where it entered the heart. Another case of a double *vena cava inferior* is quoted by Meckel, [††] in which the accessory vein rose from the liver, and opened into the right ventricle. Breschet [‡‡] relates two cases, to which we shall have to allude again more particularly, where, in addition to two *cavæ superiores*, the *cava inferior* was also accompanied by a second vein proceeding from the liver to the left auricle. In one of these instances, there were two pulmonary veins; in the other, the *vena azygos* was double. It is worthy of remark, that the abdominal aorta, the basilar artery, and other single arterial trunks, are all occasionally found double; while in those vessels naturally symmetrical, as the carotids, phrenics, renals, and spermatics, there is a great disposition to unite into a single trunk.[*]

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[*] Here, as well as in other parts of this essay, we include the malformations of the great vessels in immediate connection with the heart, as it is impossible to omit the one without rendering the description of the other incomplete.

[†] Med. and Phys. Journal, Vol. xiii. p. 120.

[‡] Manuel d'Anat. Gen. et Pathol. &c. Tome ii. p. 526.

[§] De Confluxu Triarum Venarum Cavarum. 1763.

[||] Neue Schwedische Abhandlungen, T. ii. p. 236.

[¶] Rép. Gén. d'Anat. T. ii. p. 7 to 11, Pl. I.

[**] Kerkringii Spicilegium Anatomicum, Amstel. Obs. xxix. Tab. xi.

[††] Dissert. Inaug. de Cordis, &c. p. 19.

[‡‡] Rép. Gén. d'Anat. &c. T. ii. p. 11.

To understand the malformations of excess in the aorta, we must call to mind the state of that vessel in early fœtal life. It must be recollected that it never unites beyond the middle of the dorsal region, but presents at one period almost exactly the structure of this part in the turtle, (viz. an arch passing down on either side, with a *ductus arteriosus* opening into it from each pulmonary artery,) and that the principal change which it afterwards undergoes, is the obliteration of this arch on the right side. In the magnificent plates of the arteries by Tiedemann [†], there is a case quoted from Malacarne [‡], which beautifully illustrates this formation. The aorta, immediately after leaving the left ventricle, divides into two branches, which passing upwards, each give off, as in the turtle, the vessels to the head and upper extremities on each side, when they again unite to form the *aorta descendens*. It is true that the relative position of the parts in this instance has suffered considerable change, but that is of little importance, in comparison with the striking analogies they present in other respects. It is probable that another of the cases represented by Tiedemann,[§] from Homellius,[‖] may be traced to the same cause. In this, "Aorta sub arcus initium divisa et ad finem ejusdem sursus unita conspicitur. Per hanc quasi insulam, transeunt trachea et œsophagus." The arrangement of the vessels, as represented by Dr Allen Thomson [¶] in the chick about the 12th day, bear a sufficiently strong resemblance to this malformation, to enable us to trace an analogy. Serres[**] also refers to a case, though he has not entered into any details concerning it, in which he says, "There was a bifurcation of the aorta, which in its upper part, reproduced what we observe in the *Sauria*." A case, offering some resemblance to this structure, but very curiously complicated, has been more lately described by Dr Chichester[*] of Cheltenham; that of a monster with one head, one heart, one stomach, but with the rest of the body generally double. In this instance it was observed that, "from each ventricle sprung an aorta; of the two vessels, one turned to the right, the other to the left. The one which turned to the left went down in the natural direction; while that which turned to the right, crossed the right vertebral column, and passed down on the outer side of it. A transverse vessel, of somewhat smaller calibre, passed from the beginning of the turn of the arch on one side, to the same part on the other side, thus forming a communication between the two aortas."

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[*] Dr Green on the Varieties in the Arterial System of the Human Body, Dublin, 1830, p. 20.

[†] Tabulæ Arter. Corp. Human. Tab. iv. Fig. 7.

[‡] Osservazioni in Chirurgia, Torino, 1784, P. 2, p. 119, Fig. 1, 2.

[§] Tabulæ Arter. Corp. Human. Tab. iv. Fig. 6.

[‖] Commercium Litter. Norimberg, 1737. Hebdomas, xxi. p. 161, Tab. ii. Fig. 1, 2.

[¶] Edin. New Phil. Journal, Jan. 1831, Plate iii. Fig. 31.

[**] Annales des Sciences Nat. T. xxi. p. 20.

A double state of the *ductus arteriosus* is of very rare occurrence,—indeed we know of no other case, than the one we are about to relate from Breschet.[†] It occurred in a child, whose heart was placed in the centre of the thorax, and whose vascular system presented several other deviations from the natural state. The left arterial duct was observed opening as usual into the *aorta descendens*, under the origin of the left subclavian artery; while on the right side, a somewhat longer though smaller vessel, was found to communicate between the right pulmonary artery and right subclavian, just at the bifurcation of the brachio-cephalic trunk. When we consider that it is the fifth arch on the right side which in mammalia is obliterated, that it is the fourth which constitutes the right pulmonary artery, while the third forms the brachio-cephalic trunk, and that, consequently, between these two latter, a direct communication[‡] must and does exist in the early fœtus, we cannot but confess, that a more beautiful illustration of arrestment of developement, could not be desired.

Congenital Hypertrophy.—It may be thought that, by including cases of hypertrophy under the term of malformation, we are acting at variance with our own definition; but in these cases it seems necessary, for they approach so nearly to true malformations, not only in the forms they represent, but even in the mode of their formation, that it becomes very difficult to draw the line of distinction. The malformations of this class chiefly exhibit themselves in additional septa or false cavities, formed by the hypertrophy of the *columneæ carneæ*, or other part naturally belonging to the heart. Now it should be remembered, that it is said[*] to be only from the *columneæ carneæ* that the true septum of the ventricles is formed, and, therefore, the increased developement of such parts, is no more to be considered the effect of diseased action, than is the double state of the brain or heart itself.

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[*] Loudon's Magazine of Nat. Hist. Vol. i. p. 135, an account of a monster of the sheep genus, by John Chichester, Esq. M. D.

[†] Rép. Gén. d'Anat. &c. T. ii. p. 10, Pl. 1, Fig. A.

[‡] See a diagram of the Branchial Arches of Mammalia, and their transformations, Edin. New Phil. Journal, Jan. 1831, Pl. iii. Fig. 39.

The *columneæ carneæ* are sometimes hypertrophied to a considerable extent. The union of several of them, so as to form one thick fleshy mass, is a very common appearance in the heart. In a case mentioned by Louis,[†] they were so much enlarged, and so much pressed together, that they appeared to form one continuous plane; and in this way, we have no doubt, are many of the false septa, forming partial cavities, to be explained. They may be distinguished when occurring in the auricles, from those depending on original duplicity of form, by the absence of additional auricular appendages; and in the ventricles, by the presence of the single mesial line, marking the division of the right and left sides. Thus, in the case of a heart with only a single auricle and ventricle, seen by Farre,[‡] "the auricle was divided from its appendix more distinctly than it is in the natural structure, by an intermediate septum;" thus forming two partial cavities, but with only one auricular appendage. This is well contrasted by another case, shown to the same author[§] by Lawrence, where the auricles might have been called single, as they formed only one cavity, crossed by a thin muscular band, had not the two appendices proved that it was on an arrestment of developement of the septum only, that the malformation depended.

Into the anormal cavities, thus formed by the increased growth of natural parts, vessels may often open. Farre[‖] refers to two instances, of what he calls a third ventricle, in one of which "two apertures in the right ventricle communicated with a very small third ventricle, from which the pulmonary artery, correctly formed, and of its natural size, arose."

Other cases, apparently of this nature, have been described by the older anatomists, but not with an accuracy on which we can place much dependence.

Original Duplicity.—This may prevail with respect to the whole heart, or may be confined to some of its parts only.

The double state of the whole heart, when some other parts of the body are double, is not rare. Walter[*] has described a case in the human subject, and Monro[†] in the calf. An exception to this rule, however, occurs in monsters by partial inclusion, which are united by the sternum, as in the heteradelphe of Benais,[‡] where the heart and brain are almost the only parts single. Meckel[§] says that "in the goose, in the double state of the whole body, or of the upper extremities only, an increased size of the heart is frequent; a double heart, less common; and this state, still more rare, when the body is simple." Boerhave[‖] found two imperfect hearts in a rat. In another case,[¶] there were two perfect hearts, an inch apart, in the common fowl. Collomb[**] has described a case of a completely double heart in the human subject, where there was, if any thing, a defective developement of other parts. The most indubitable case, is one recorded by Meckel,[††] which we relate in his own words. "In patris quoquo musæo corda anseris unius exstant duo normalia, sed de quibus fere nihil dici potest, nisi quod singula duplex habeant cavum, et ex singulis aorta emergat, et ligamentum inter utrumque intercedat valde obscurum, cum casu tantum in ansere jam cocto inter mensam fuerint inventa."

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[*] "From part of these netted fibres, some of which, in a more advanced state, no doubt, constitute the columneæ carneæ of the ventricle, the septum which divides the cavity springs." Edin. New Phil. Journal, Oct. 1830, p. 27.

[†] Arch. Gén. de Méd. T. iii. p. 334.

[‡] Farre on Malformations of the Heart, p. 3.

[§] Ibid. p. 30.

[‖] Ibid. p. 26 and 30.

Duplicity of some part of the heart only, is an occurrence of great rarity. Andral[‡‡] in his Anatomie Pathologique, says "I have seen a heart with three auricles, and another with four ventricles," but does not give any more detailed description of them. One instance is mentioned by Kerkring,[§§] in which there was a double state of the right ventricle, with two pulmonary arteries; and a second by Chemineau[‖‖] showing three ventricles united together, the right receiving the *vena cava*, the left the pulmonary veins, while the middle one gave off the aorta and pulmonary artery. These are the very few cases of this kind of malformation we have been able to collect, and the last even of these is more than doubtful. It is probably only a case of two auricles with a single ventricle; for Chemineau does not mention the state of the former, besides that he compares it to the heart of the tortoise, to which it would then be nearly allied.

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[*] Walter, Observat. Anatom. p. 8.

[†] Catalogue of the Museum of the University of Edinburgh, p. 245.

[‡] Mémoires du Museum de l'Hist. Nat. T. xv. p. 385.

[§] Handbuch der Pathologischen Anatomie, Band ii. p. 34.

[‖] Boerhave Pathol. Betrachtung des Herzens. Abhandl. für practische Aerzte, Band ix.

[¶] Meckel, Disert. Inaug. de Cordis, &c. p. 8.

[**] Collomb, Œuvres Med. Chirurg. Lyons, 1798, p. 462.

[††] Meckel, Dissert. Inaug. de Cordis Conditionibus Abnormibus, p. 48.

[‡‡] Andral's Pathol. Anat. translated by Townsend and West, Vol. ii. p. 333.

[§§] Kerkringii Spicileg. Anat. Obs. 69, Tab. xxii.

[‖‖] Mémoires de l'Acad. des Sciences, 1699, p. 42.

Malformations of Position.

As we advance with our subject the difficulties of explanation, if possible, increase,—so innumerable are the varieties we meet with,—so imperfect our knowledge of anormal developement. Before the division of malformations on which we are now entering can be treated with any great success, it is necessary that we should possess a more accurate knowledge than has yet been obtained, of the relative situations occupied by different organs during the different periods of fœtal life. It is well known, that almost every organ does undergo considerable changes in this respect;—the descent of the testis furnishes a familiar example; and it would appear, that, as with respect to form and number, in position also, the changes increase as the animal rises in the scale of creation. The movement of the spinal marrow, has been noticed by Tiedemann and Serres; and that of the heart, is not less worthy of accurate investigation. We know that the heart, soon after its first appearance, is placed high in the neck, till it gradually descends, and occupies the centre of the thorax, where it remains placed symmetrically till a somewhat late period. We are even at present able to trace many cases of malposition, to arrestment of developement; others probably owe their origin to displacement from defective formation in neighbouring organs; some may perhaps be connected with certain movements of the embryo itself; others may arise from unnatural adhesions between various parts; while we must confess, that there are still many, which appear to set at defiance all laws of formation,—all relation of parts,—all adaptation of means to an end. Such at least they appear to us at present; but I have too much confidence in the motto, "l'ordre est dans le désordre," to believe that nature can ever act so much at variance with herself, or that there is any apparent anomaly, which a further knowledge of developement will not fully explain.

Malformations of position form two pretty distinct classes,—those of simple *exposition*, and those of absolute *transposition*; the first, where the organ or any part of it has merely changed its position without occupying that of any other part,—as where the heart is without the thorax; the second, where the whole organ has taken a situation directly opposed to that which belongs to it, or where some of its parts have exchanged places with each other,—as when the pulmonary artery rises from the left, and the aorta from the right ventricle. In both these divisions, are many examples, on which we scarcely dare hazard a conjecture, as to the mode of formation.

Exposition.—Among the cases classed as those of simple exposition, we find considerable variety. The organ may be placed entirely without the body; it may be situated within the body, but out of its proper cavity; it is found in its proper cavity, but out of its usual place there; and, lastly, the various parts of the organ may assume an unnatural position with relation to each other.

The first kind, in which the heart is on the outside of the body, includes some of the most fatal as well as most frequent cases of exposition of this organ. It is generally connected, either with deficiency in the diaphragm and abdominal parietes, or with absence of some part of the walls of the thorax. In the former case, we generally find the heart, liver, and stomach, and often the lungs, and all the abdominal viscera contained in a sac, sometimes covered only by peritoneum,* sometimes by an extension of the common integuments, † and sometimes occupying the sheath of the umbilical cord, ‡ forming a variety of umbilical hernia. In some of these cases, adhesions have been traced between the misplaced viscera or the sac containing them, and the surrounding membranes. In one described by Breschet, § the umbilical cord, which had become attached to the sides and top of the head, contained within its sheath the abdominal and some of the thoracic viscera. The heart, occupying the upper part of this mass, was attached by its apex to the palate, with which it had formed adhesions. In another monster, described by the same author from M. Bonfils of Nancy, the heart and other viscera had become adherent to the placenta, and were thus drawn away and prevented from occupying their proper cavities. St Hilaire || relates a somewhat similar case, in which there were also evident marks of adhesion, to which he of course imputes the malformation; and indeed does not hesitate to refer all others to a similar cause, though we suspect it would be difficult to prove the assumption. When these adhesions occur, it is certain they must be contracted, before the parietes of the thorax are fully formed. At what precise period this process takes place, we are not aware; but from the comparative frequency of the malformation, it is probably late before it is completed.

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* Many examples of this kind may be seen in the Hunterian Museum Glasgow. See also Arch. Gén. de Méd. T. xxiii. p. 511, and Rép. Gén. d'Anat. T. ii. p. 20.

† Acta Helvetica, Vol. vii. p. 56, de Fœtu Monst., &c. Meckel Dissert. Inaug. p. 6.

‡ Rép. Gén. d'Anat. T. ii. p. 25.

§ Ibid. T. ii. p. 24, Tab. ii.

|| Arch. Gén. de Méd. T. xii. p. 632.

Exposition of the heart, from defect in the parietes of the thorax, is less common. A heart in this situation, is said to have been seen by Martinesius,* "with its cone and base lying horizontal, and without a pericardium."—"As if," adds the commentator, "the heart, not bearing so close a confinement, burst through the breast, and having broken the sternum, appeared on the outside." In the museum of the University of Edinburgh,† is another example in a fœtal calf, where the heart is seen projecting between the ribs. Some additional cases of protrusion of the heart from the thorax are mentioned by Breschet,‡ especially from defect of the lower part of the sternum. In many instances, the disposition to imperfect formation along the mesial line, on which such deficiencies depend, shows itself at the same time in other parts, as by the hare-lip, the defective palate, the *spina bifida*, the open perinæum, and many others. It may be difficult in these cases to say, whether the malposition of the heart may be the cause or the effect of the malformation of the sternum; or whether, as is equally probable, both may not arise from an extension of the same general cause, without any necessary dependence on each other.

The situations assumed by the heart, when within the body but out of the chest, have been found to vary, from the abdomen to the neck. In Mr Wilson's case, § which has been already referred to, the heart was in the abdomen, lodged in a fissure on the surface of the liver. Some of the tendinous part of the diaphragm was in this instance wanting, and the heart formed a tumour protruding from the upper part of the abdomen; so that, although this could not be considered actually out of the body, it was a very near approach to the former species. M. Deschamps || has given the particulars of a much more perfect case, in which the heart was found to occupy the place of the left kidney. By no means the least curious circumstance in this history is, that the man had passed an active life, and attained a considerable age, without ever suspecting any displacement of the heart. There does not here appear to have been any malformation of the diaphragm, nor indeed of any other part. It is exceedingly difficult to account for this case of malposition, unless we suppose the heart to have been pushed down by some enlargement of the lungs or thymus gland, or

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* Phil. Trans. abridged, Vol. viii. p. 508.

† Cat. of Anat. Mus. of Univ. of Edin. p. 245.

‡ Rép. Gén. d'Anat. T. ii. p. 15.

§ Phil. Trans. 1798, p. 346.

|| Journal Gén. de Méd. &c. T. xxvi. p. 275. Rép. Gén. d'Anat. T. ii. p. 17.

bound down to the abdominal viscera by adhesions, contracted before the diaphragm was formed.

In the excellent memoir by M. Breschet before referred to, "Sur l'ectopie du Cœur," a case[*] is described, in which the heart, lungs, and thymus gland were all contained in the anterior part of the neck, forming a large tumour under the lower jaw. The point of the heart, attached to the base of the tongue, was placed between the two branches of the lower jaw, which were very small, and separated from each other. The thorax was occupied by the abdominal viscera, which had passed up through a fissure in the diaphragm. Breschet conjectures that this is a case of simple arrestment of developement, since the heart occupies a nearly similar position in the early fœtus. Though we allow that, before the union of the two sides of the body along the anterior mesial line, or rather perhaps before the sides are formed, the heart lies nearly in contact with the lower part of the head, the neck being extremely short, and the body curved forward; yet we must think the presence of the thymus gland and lungs in the same situation, completely disproves M. Breschet's supposition. The lungs do not make their appearance till the branchial clefts are declining, at which time the neck elongates, and the heart assumes its place in the thorax, so that the lungs are at no period naturally placed in the position assumed in this monster. The thymus gland is even still later in its formation.[†] How far the diaphragmatic hernia may have operated in effecting this change of position, it is difficult to say, but we feel inclined to attribute some influence to this cause. Walter[‡] met with a case in a new born lamb, in which the heart occupied another position in the neck; it was placed with its base towards the thorax and without the pericardium, in the lower part of the neck, whence it gave off its vessels as usual.

It would be an almost endless task, to enumerate all the varieties of position, which the parts of the heart may assume in relation to each other; we must therefore content ourselves with mentioning a few of them. With respect to the mode of formation of many of these, we are too much at a loss to offer even a conjecture.

In a case dissected by Dr Holmes[§] of Canada, and communicated by Dr Alison to the Medico-Chirurgical Society of Edinburgh, the right auricle was found to open into the left ventricle, in place of the right. The only means by which the blood could enter the pulmonary circulation, was in this instance, through a small perforation in the septum of the ventricles. "The preternatural orifice between the right auricle and left ventricle was large, and furnished with valves similar to the tricuspid."

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[*] Rép. Gén. d'Anat. T. ii. p. 24.

[†] Rathké in the Rép. Gén. d'Anat. &c. T. vii. p. 37, and Dr A. Thomson, Edin. New Phil. Journal, January 1831, p. 74.

[‡] Mus. Anat. Descriptionis continuat. prim. ex Catalogis Walteri Autographis ab Rudolphio instit. p. 3102.

[§] Trans. of Med. Chirurg. Soc. of Edin. Vol. i. p. 257.

The aorta and pulmonary artery, are not unfrequently malplaced. We have already noticed, the communication of each of these vessels with both ventricles at once, by means of the imperfection of the septum near their roots; in other cases, we find them both opening into one of these cavities only. In the Museum of the College of Surgeons of Edinburgh, there is an example in which the aorta and pulmonary artery communicate only with the left ventricle, and another in which they both rise in a similar manner from the right. Of this latter deviation, two other cases are also on record.*

The *ductus arteriosus* rarely wanders from its natural situation. The instance we have before alluded to, in which it opened into the left subclavian artery, is among the most interesting of its deviations.

Malposition of the pulmonary or systemic veins, is generally found in conjunction with considerable malformation of the heart itself. The right pulmonary vein in such cases, frequently opens into the *cava superior*;† and the left into the left subclavian vein.‡ There is sometimes a pulmonary vein for each auricle,§ and the right has even been found passing through the diaphragm, and opening into the *vena portarum*.‖ When the *venæ cavæ* are double, the right will sometimes open as usual, while the left empties itself into the left auricle.¶

We now come to those cases of malformation in which the heart, though placed in the chest, does not occupy its natural situation there. Cases of this species of exposition, though of pretty frequent occurrence, from the very slight inconvenience they occasion, have received comparatively little attention. Some of them appear to depend on arrestment of developement; others on displacement from hernia, or tumours in the neighbourhood; and others again on morbid adhesions. Some of these congenital errors of position, are very similar to those into which the heart is sometimes driven by diseases of the pleura or lungs, or even by certain organic lesions of the heart itself; and might therefore mislead the physician, if the possibility of their occurrence as malformations, was not borne in mind.

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* Arch. Gén. de. Méd. T. xxiii. p. 511. and Med and Phys. Journal, Vol. lxi. p. 548.

† Meckel, Dissertat. Inaug de Cordis, &c. p. 19.

‡ Med and Phys. Journal, Vol lxi. p. 548.

§ Rép. Gén. d'Anat. &c. T. ii. p. 9. Plate I.

‖ Med. and Phys. Journal, Vol. lxi, Loc. cit.

¶ Rép. Gén. d'Anat. Loc. cit.

The direction of the apex of the heart to the right side, and the situation of the whole organ more or less to the right of the mesial line, is among the most common of the situations occupied by the heart, when out of its usual place. Breschet * has himself seen the heart on the right side four times, and refers to Otto, † Moellenbrock, ‡ Mohrenheim, § and Elvert, ‖ for similar cases, and these too, unconnected with the transposition of any other viscus. Dr Ramsbottom ¶ has lately given an instance, of the point of the heart on the right side; and Sandifort, Morgagni, Haller, Meckel, and many others, have witnessed like cases.

The location of the heart in the centre of the thorax, has been met with occasionally. Breschet ** has described one case, in which it was placed directly in the centre of the chest, but with the apex slightly turned to the left side. This is a malformation we may fairly attribute to arrestment of developement, as Meckel describes the heart nearly in that position in the human embyro, as late as the ninth week.

The horizontal and transverse positions are said to have been assumed by the heart, but they are of rare occurrence as congenital malformations; and indeed it seems doubtful, whether the effects of disease may not have been mistaken for such. Bertin †† figures a heart lying transversely in the chest, but its malposition was dependent on a large aneurism of the aorta, and extensive disease of the heart itself.

Ignatius de Torres ‡‡ relates an extraordinary case, in which he says he observed, "in a new-born female infant, the heart without a pericardium, and turned upside down, so that its basis, with all the vessels, had fallen down as low as the navel; and its apex, still on the left side, lay hid between the two lungs."

In the University Museum here, is an instance §§ of congenital displacement of the heart from imperfection of the diaphragm,

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* Rép. Gén. d'Anat. T. ii. p. 6.

† Handbuch der Pathol. Anat. des Menschen und der Thiere, 1814.

‡ Miscell. Natur. Curious. Dec. i. Ap. Obs. 76.

§ Wiener Beiträge, &c. Prakt. Arzneyk, T. ii. p. 305.

‖ De Phthisi Pulmon. in viro cui cor in dextro pectore pulsabat, 1788.

¶ Med. and Phys. Journal, Vol. lxi. p. 548.

** Rép. Gén. d'Anat. T. ii. p. 7.

†† Traité des Maladies du Cœur, &c. 1824, p. 103.

‡‡ Phil. Trans. Abrd. Vol. viii. p. 509.

§§ Cat. of Anat. Mus. of Univ. of Edin. p. 244.

"through which the stomach and spleen, with almost all the intestines, had passed into left cavity of thorax, displacing the heart, and impeding respiration."

Transposition.—Our second class of malpositions, or that of transposition, consists of only two species, as far as we have at present been able to ascertain. In the first, the heart is completely transposed, so as to occupy, on the right side, a situation in almost every respect similar to that which it usually holds on the left. In most of these cases the aorta makes a like turn, and passes down on the right side of the spine,[*] while the right lung presents the characters commonly found in the left.[†] The transposition of the aorta is not, however, a necessary consequence of transposition of the heart. In a celebrated case, of which Mr Abernethy[‡] has given the history, the aorta, though making its turn to the right, and giving off an *innominata* or brachio-cephalic trunk, to the left, regains its natural position before it becomes the abdominal aorta. The aorta, too, may be transposed when the heart is not affected. In the case we have before mentioned, in which the heart was in the centre of the chest, the abdominal aorta was on the right, though the arch turned to the left; and in a case figured by Cruveilhier,[§] the heart is placed quite naturally, though the aorta through its whole extent is directed to the right side. The disposition to transposition, is not confined to the vascular system; the stomach and spleen frequently occupy the right hypochondrium, while the liver often takes its place in the left. On what this extraordinary change can depend, we know not; nor indeed can we expect to know, till we have ascertained why the aorta in mammalia occupies the left side, and why in birds the right is preferred.

The second species of transposition, is perhaps still more extraordinary; it consists in the transposition of the aorta and pulmonary artery; the aorta taking its rise from the right ventricle, the pulmonary artery from the left. Baillie[||] was the first to describe a case of this kind; since that, M. Professor Dugés has seen the same malformation in France;[¶] a similar case is also preserved in the Museum of the College of Surgeons of Edinburgh, and another in the Museum of Guy's Hospital, London.[*] The fact is therefore incontestible, inconsistent as it may appear with all laws of formation, incompatible as it is with the existence of the individual. It would be impossible to give any rational explanation of this, as well as many other of the malformations here collected. We do not, however, despair of seeing the day, when all these will be as easily understood as those of arrested developement; nor do we think that those who know how very lately it is, since the explanation of even these facts could have been given, and who recollect how many active minds are now engaged in the pursuit, will believe us too sanguine in the hope we have expressed.

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[*] Rép. Gén. d'Anat. &c. T. ii. p. 7. Pl. 1, Fig. 1.

[†] Arch. Gén. de Méd. T. xviii. p. 82.

[‡] Phil. Trans. 1793, p. 60.

[§] Anatomie Pathologique du Corps Humain, Livraison 1.re, Pl. vi. There are some peculiarities in the distribution of the vessels to the lungs, in this case which appear quite anomalous. Were it not for the high authority on which they are given, we should be inclined to suspect some error, and consider them rather as varieties of the bronchial arteries, and quite unconnected with the pulmonary circulation.

[||] Morbid Anatomy. 1830. P. 36.

[¶] Arch. Gén. de Méd. T. xxii. p. 232.

PART III.—PATHOLOGICAL EFFECTS, SYMPTOMS AND TREATMENT.

SUCH, then, are the chief congenital malformations, hitherto noticed in the anatomy of the heart; and such the principles, on which we conceive their developement depends.

By what changes of structure are they attended, and by what signs are they to be recognized? We shall proceed to answer these questions, by some considerations on their pathology, symptoms, and diagnosis.

It must be evident, that many of the malformations we have described, are so little adapted to perform the functions required of the parts, as to be incompatible, with even a temporary independent existence;—Acardia is a manifest illustration: while others may be present without ever causing the slightest inconvenience;—some of the species of malposition are of this class: and both of these may therefore be dismissed for the present. Those which remain, varied as they are in form, with respect to function, resolve themselves into one, differing only in degree. The admixture of the black and red blood, and the impediment offered to a free circulation, are the common effects of all, to which the whole train of symptoms may be more or less directly referred. It is to the consideration of these we shall now confine ourselves.

Pathological Effects.

Before entering into the description and theory of symptoms, it may be as well to notice, some of the *morbid changes of structure* in the various parts of the heart, which are often found in connection with congenital malformations; and some circumstances in the history of these changes, which have led to doubts as to the period of their formation. In the nineteen cases collected by M. Louis,[*] there were ten instances of diminution of the orifice of the pulmonary artery, while it occurred only once in the aorta. Disease of the tricuspid valve, is more common than of the mitral; but both are rare. In the cases already quoted, dilatation of the right auricle was observed in eighteen; five times with hypertrophy, and twice with atrophy of its parietes. The right ventricle was dilated nine times; and in four of these it was also hypertrophied. Simple hypertrophy of the walls of this cavity occurred in six others. On the left side, dilatation of the auricle was seen eight times; of the ventricle, four. Hypertrophy of the former, is mentioned in three instances; of the latter, in two only. It must strike every one that these appearances, as hypertrophy, retraction of the orifices by deposition or union of the valves, &c. are so analogous to other independent morbid states of the heart, that there can be little doubt that they must arise from similar causes, and are frequently formed long after birth. They have, however, in other cases been found at so early an age, as to be attributable, only to a morbid action prevailing during the period of fœtal developement. To the latter, must we refer many of those instances terminating fatally soon after birth; to the former, those which show themselves only at a later period.

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[*] Cat. of Anat. Mus. of Guy's Hospital, No. 1392.

This leads me to one of the most extraordinary circumstances, in the history of the disease under consideration. Many of the subjects of malformation of the heart have lived for sixteen, twenty, or many more years, without betraying any striking symptom of the presence of such affection; and this has led to a doubt, whether the malformation has existed, previously to the occurrence of the train of symptoms, by which it is usually known. Most of the cases in which such a doubt is admissible, will be found to consist of simple communication of the cavities, by perforation of their *septa*; and in these instances we think, the causes of this apparent anomaly may be made sufficiently obvious.

Laennec[†] conceives that the narrow oblique opening which is often seen between the plates of the valve of the *foramen ovale*, though preventing any admixture of the venous and arterial blood, is often the cause of a more serious affection; since by a violent blow or sudden effort it may easily become dilated, and then progressively enlarged. A case related by Corvisart,* is generally cited, as most strongly confirmative of this opinion. A postilion, aged 57, who is not said to have shown any previous indications of diseased heart, was attacked with dyspnœa, palpitation, &c. &c. after a severe injury from a carriage passing over him, and a violent blow in the epigastrium. He continued for three years, to present, with alternate accessions and remissions, the same symptoms; and after death, exhibited a *foramen ovale* an inch in diameter; dilatation of the right auricle, with dilatation and hypertrophy of the right ventricle. In other cases, the symptoms have first showed themselves, after violent fits of coughing; as in *pertussis*, or other pulmonary affections.

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[*] Observations suivies de quelques Considérations sur la communication des cavités droites avec les cavités gauches du cœur, par M. Louis, Arch. Gén. de Méd. Tome iii.

[†] Laennec on Diseases of the Chest, &c. Translated by Forbes. 1829. p. 630.

The following considerations induce us to believe, that such causes can operate but very seldom, if ever. Cases are known, in which the *foramen ovale* has been pervious, or the *septum ventriculorum* imperfect, though no indication of such formation was ever present during life, and the fact itself only discovered after death. The absence of symptoms, therefore, does not entitle us to conclude that congenital malformation may not exist.† It is not difficult to account for this seeming anomaly. As long as the circulation remains tranquil,—the lungs continue healthy,—a free passage exists through the pulmonary artery,—and the two sides of the heart maintain their natural proportions;—even though there is an anormal communication between the two cavities, little blood will pass through it. For we must remember, that the fibres of the heart, contract in such a direction as to urge the current of the blood, rather in its natural course, than to any other channel; and also, that an equal power, (relative to the force required,) is exercised on either side, and, therefore, the inclination of the fluid to pass from one side to the other, is equally opposed. But only let this balance of the circulation be destroyed; let more blood be sent to the right side of the heart by emotion, or exercise; or from disease let congestion take place in the lungs; and the accumulated mass of blood, stimulating the heart to increased action, is driven to seek an outlet where it may, and at once passes through these anormal openings.

From the augmentation of the *mass* of the fluid, the cavities, especially the auricular, soon become dilated; while by the *increased action*, according to a general law in the developement of muscles, increased growth or hypertrophy ‡ is produced.

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* Corvisart, Op. Cit. p. 279.

† Of the former case, I have myself lately seen an instance in the Royal Infirmary Edinburgh, the subject of which died of Icterus. The heart was otherwise quite healthy.

‡ The opinion of Corvisart, that the hypertrophy of the right side depends on

In opposition to the opinion maintained by some, that the communications between the ventricles are the effect of ulceration or rupture, we may urge, that the edges of the openings are mostly smooth and tendinous, not presenting the thick and rugged surface of ulceration, nor the ragged fibrous appearance of rupture; that they are not preceded by the inflammation, which must be the forerunner of an ulcer, nor is the death so sudden as it would be, if the heart was ruptured.* If we observe, too, the situations in which the openings generally occur; we shall find them at the upper and posterior parts of the interventricular septum, parts which, from their being last formed, are known to be most subject to retardment of developement, but which are least exposed to the occurrence of ulceration or rupture.† If to these it be added, that in cases which from birth have shown indications of the disease, we find exactly the same appearances, as in those apparently affected only a few months before death, we shall have, I think, sufficient reason to conclude, that these malformations are almost always of congenital origin.

Symptoms.

The symptoms exhibited by congenital malformations of the heart arrange themselves naturally enough under the respective functions, of circulation, respiration, and nutrition; and it is in this order we shall treat of them.

Circulation.—The physical signs to which the action of the heart gives rise, and which are appreciable by mediate auscultation, are unfortunately almost unknown with reference to our present subject. Laennec himself had but little opportunity of trying its effects; and by later authors, its use in such cases has been much neglected. As the blood, however, in its natural course, gives certain manifest signs, it is but fair to believe that our improved knowledge of the means of investigation, and their careful application, will enable us to detect some changes, caused by such striking deviations from that course. The contraction of the orifices, very frequently complicated with congenital malformation, is indicated by the *bruit de soufflet*,—according to Elliotson; ‡ and may consequently be expected in such cases. This symptom is mentioned by Laennec, Louis,

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the entrance of arterial blood into its cavities, and was caused by its more stimulating qualities, is not tenable. Some would be inclined to attribute it to the effect of inflammation, but we do not see why the heart should not follow the same laws of developement as the voluntary muscles; nor do we think there are any facts which contradict it.

* Bertin, Traité des Maladies du Cœur, &c. p. 395.

† Bertin, p. 394, and Andral, Anat. Pathol. T. ii. p. 307.

‡ Elliotson, Diagnosis of Diseases of the Heart, folio. London, 1830. p 13.

and others,* but it is probable that in all these cases, it depended only on the cause just assigned. The dilatation and hypertrophy of the right side, the symptoms of which are pretty well established, are much more rare than on the left, except when combined with malformations, and will therefore of course help us in our diagnosis. Frequent palpitation on slight exertion, is a symptom very common in these affections, and on careful inquiry is generally found to have existed from birth, though perhaps little noticed. When the disease has fairly established itself by the morbid formations already described, the patient is liable to severe paroxysms of dyspnœa, during which, palpitations are very apt to occur, though the heart's action may be sufficiently regular at other times. It is subject, however, to great variety in this respect. In one we find "the action of the heart strong, but felt only at intervals,"† in another so strong as to be seen at a distance,‡ while in a third it is so weak as scarcely to be perceived. Corvisart § in one instance, mentions that "la main, placée sur la région du cœur, sentait un battement peu régulier, accompagné d'un *bruissement* particulier très-rémarquable." There was here absence of one of the aortic valves, on which this phenomenon probably depended.

The pulse is scarcely more certain in its indications. When the body is at rest, the pulse is frequently quite natural. During the paroxysm, it is in some intermittent, in others regular; in some strong and full, and again in others almost imperceptible. It is not always synchronous with the heart; || perhaps irregularity is its most general character. It should be understood, that we do not consider these changes in the circulation to depend on the original malformation, but to arise rather from the subsequent disease of other parts of the heart.

From the congestion, which we have already stated to be one of the effects of these malformations in their later stages, hemorrhages are of frequent occurrence. These mostly proceed from the nose or gums, sometimes from the stomach, intestines, or lungs. It has been noticed in the lungs particularly, when combined with tubercles there.¶ These hemorrhages are generally trifling, and not, as some have supposed, the immediate cause of death in most instances.

The changes in the state of the brain and mental functions,

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* Laennec, p. 628 and 629, Louis, Arch. Gén. de Méd. T. iii. p. 332.

† Dr Abercromby's Contributions to the Pathology of the Heart, Edin. Med. Chirurg. Trans. Vol. i. p. 59.

‡ Dr Hunter, Med. Observ. Vol. vi.

§ Corvisart, Op. Cit. p 276.

|| Ibid. p. 277.

¶ Louis, Arch. Gén de Méd. Tome iii. p. 331, and Farre, p. 34.

probably dependent on some alteration in the cerebral circulation, are headach, vertigo, and excessive irritability of temper. Farre [*] includes also, torpor of the brain, epilepsy, apoplexy, paralysis, and syncope. Of these latter, the first may be seen in cases of partial idiocy, but would rather come under the head of nutrition; the three next do not appear to be of frequent occurrence, and are rather coincidences than effects, while the last we are inclined to consider misnamed. Instead of syncope, dependent on an imperfect supply of blood by the arteries, and attended by paleness of the surface, want of action in the heart, &c. &c. it is probably asphyxia, arising, according to Bichat, from the transmission of black blood through the brain. It is certainly attended with most of the appearances usually seen in such cases.

The torpor of the brain is sometimes observed in common with that of other parts of the body, and seems to owe its origin to the defective stimulus afforded by the black blood with which the arteries are filled.

Irritability of temper is quoted by Corvisart [†] in a case from M. Caillot, among others, and appeared to have been present from birth. It is often very strongly marked, and frequently induces the recurrence of the paroxysm.

The palpitations and disturbance to the circulation, in many instances, seem to be influenced by the state of the stomach. In some, the simple distension of the part will explain the impediment offered to the heart's action, but in others, according to Nasse, [‡] it arises from indigestion, and is variously affected according to the nature of the food taken.

The pulsation of the jugulars, though noticed but rarely, is probably a very common symptom, from the frequent occurrence of dilatation of the right auricle.

Respiration.—The symptoms referrible to lesions of this function, are among the most important the disease presents. The breathing is habitually short and difficult,—easily excited by slight exertions, or violent mental emotions,—and often terminating in dreadful paroxysms of dyspnœa. During this state, the sense of suffocation is intense; the body is slightly convulsed; the surface turns of a dark purple colour, and colder than natural. The eyes now become prominent, the face bloated, the jugulars turgid, the respiration deep but slow with occasional screaming, the *decubitus* forward or abdominal, till at last the patient sinks down insensible, and scarcely seems to breathe. The paroxysms[*] sometimes occur periodically, and are frequently the immediate cause of death. Their duration is very various, from a few minutes to several hours. Patients generally recover from this state with a sigh or yawn, and even when it has been most severe, express themselves much more relieved than before its occurrence.[†] How is this symptom to be explained? Mr C. Bell[‡] has supposed, that, as during the occurrence of the fit, the patient either leans forward, lies on the belly, presses the breast against something hard, or supports the abdomen with the hands; and as, from assuming the decumbent posture, the fit has been put off;[§] therefore, this state depends on a want of pure air in the lungs, and this effort is made to contract the cavity of the chest, and expel as much as possible of the impure air. When this is as far as possible accomplished, continues the same author, the sigh or yawn, by which the recovery is preceded, again fills the lungs, and the patient finds himself suddenly relieved. But it is not in the lungs the disturbance first commences, and though first manifested by this organ, it is probably only from sympathy with the brain that it is affected. The causes usually exciting the paroxysm, are such as increase the rapidity of the venous circulation, and consequently overload the right side of the heart with blood; which in these malformed hearts is immediately transmitted unchanged to the left side, through the anormal communication. Hence, the blood passes forward to the brain, and produces complete or partial asphyxia; till at last the circulation again becomes equalized, and a sufficient quantity of oxygenized blood gains the left side, (for some portion still continues to pass through the lungs,) when the organs again receiving their proper stimulus, again resume their natural functions. The peculiar posture is chosen probably, as the upright in ordinary cases of dyspnœa, to allow the more easy passage of the blood from the lungs to the left side of the heart, whereby the former organ is relieved; while the fits have been put off or mitigated by lying on the belly or side, merely, as we believe, because in that position the body is most completely at rest, and the circulation becomes soonest tranquillized.

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[*] Farre, Op. Cit. p. 33.

[†] Corvisart, Op. Cit. p. 294.

[‡] Reil's Arch. für die Physiol. Vol. x. p. 276.

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[*] Duncan's Medical Commentaries.

[†] Corvisart, Op. Cit. p. 277.

[‡] Anatomy and Physiology of the Human Body. (6th Ed.) Vol. ii. p. 72.

[§] "Any hurry upon his spirits, or brisk motion of his, would generally occasion a fit. And for some of the last years of his life, he has found out, by his own observation, that when the fit was coming upon him he could escape it altogether, or at least take considerably from its violence or duration, by instantly lying down upon the carpet on his left side, and remaining immovably in that position for about ten minutes. I saw the experiment made with success."—Dr Hunter in Med. Observ. and Enquiries, Vol. vi. p. 301.

From the imperfect manner in which the blood is oxygenated, or rather from the small quantity of it submitted to the action of the lungs, two other effects arise,—the *cyania*, *cyanose*, *morbus cæruleus*, or blue jaundice, (for by all these names has it been called,)—and an unnaturally low temperature of the surface.

M. Caillot, in an essay on this subject, was the first who traced the connection, which exists between certain malformations of the heart, and a blue colour of the skin. This connection, he considered to depend on the transmission of the blood to the left side of the heart, and thence through the arterial system, without having previously undergone the influence of the pulmonary circulation. For some time, this opinion was generally received by the medical world, till Louis, Bertin, and others denied its correctness, and attributed the appearance to another cause,—congestion.

We shall then examine their arguments, and endeavour to determine how far they are correct; first, however, stating to what we consider this phenomenon attributable. There are two causes, the co-operation of which is necessary to constitute the most marked form of the affection;—1*st*, The circulation of black blood in the arteries, and 2*d*, Congestion in the whole capillary system. The first of these causes, we have already said, depends on the anormal state of the heart itself; the second, either on a want of stimulus afforded by the unoxygenized blood, or, as is more probable, from congestion in the veins, arising from the frequent accompanying disease,—contraction of the orifices of the heart.

It is argued, that CYANIA does not depend on the circulation of black blood,—because this symptom is not present in all cases of anormal communication; because it is not peculiar to these cases; because the blue colour is not general; because it is never present, except where there is contraction of the orifices causing congestion;—and lastly, because the colour of the fœtus at the birth is not purple.

We have already shown, that these malformations may exist from birth, without allowing this mixture of the two sorts of blood; and therefore it is no argument, that *cyania* does not always accompany them.

That the purple colour of the skin is not peculiar to such affections, is true only to a certain extent. In dilatation of the cavities of the right side of the heart,—in contraction of the orifices of that part,—in hepatization or emphysema of the lungs,—in spasmodic asthma,—or in hooping-cough,—in short, in all diseases impeding the circulation, and respiration, the skin becomes of a darker colour than natural. But it is on the extent to which this prevails, that the importance of the appearance as a diagnostic in this disease depends. The colour is in general much darker than in any simple congestion;[*] much more universal; much more constant; and frequently extending to the brain and other viscera. This statement is borne out by the very first case, quoted by M. Louis[†] himself, and still more so, by another from Caillot[‡]; "les téguments de la face, de la poitrine, et des membres, étaient d'un violet tirant sur le noir; les intestins et les autres viscères abdominaux d'un brun foncé. A peine pouvait on distinguer dans le cerveau la substance corticale de la médullaire."

The statement, that cyania is only present where there is contraction of the orifices, or dilatation, producing congestion, is contradicted by the case of transposition of the aorta and pulmonary artery already cited from Baillie,[§] where the heart "had nothing else remarkable in its structure," but where "the child had a most unusually livid skin."

The last argument, originating with M. Fouquier, that the fœtus, which circulates only black blood, has not a blue skin, requires some consideration. In the *first* place, the colour of the fœtus at birth and for some days after, is darker than at a later period;[‖] and, *2d*, though it has been stated by Bichat,[¶] and others after him, that the colour of the blood in the umbilical arteries and veins is uniformly dark; yet we are justified in disputing this opinion, great as is the authority, as well from reasons drawn from analogy, as from the positive experience of other authors. In alluding to this subject, Bostock[**] observes, "I cannot but feel surprise at such an opinion, as in some cases where I have had an opportunity of examining the fœtus immediately after its extraction from the uterus, the different colours of the blood in the funis appeared quite obvious, thus agreeing with the observations of Dr Jeffray; De Placenta, p. 41." To this we may add the still more recent authority of Dr Holland.* "From the kindness of my friend Mr Carr, surgeon, Sheffield, I have been enabled to prove, by an experiment of the simplest kind, that the umbilical vein circulates arterial blood."—"But on taking part of the cord, as soon as the child was born, around which I had previously tied a ligature, about two or three inches from the free extremity, and cutting this with a sharp scalpel, in order to make an even surface, I very clearly discerned, on pressing the cord from below upwards, blood of a very different colour, flowing from the umbilical veins and arteries."

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[*] I know of only two cases, which seem to contradict this. They are recorded by Dr Thomson in the 12th Vol. of the Ed. Med. and Surg. Journal. In both the blueness is said to have been general, and in both it apparently arose from suppression of the catamenia, after exposure to cold.

[†] Arch. Gén. de Méd. T. iii. p. 326.

[‡] Bulletin de la Faculté de Méd. année 1807, p. 21.

[§] Baillie's Morbid Anat. p. 36.

[‖] I have more than once observed in attending deliveries many years ago, that the fœtus had at first exclusion a dull dingy colour, but the moment it began to cry lustily, it immediately assumed a vivid red colour.—Ed. of Edin. Med. and Surg. Journ.

[¶] Bichat, Anat. Gén. 1801. T. ii. p. 343; and Magendie's Comp. of Physiol. by Milligan, p. 505. &c. &c.

[**] Bostock's Elementary System of Physiology, Vol. ii. p. 199, note.

That cyania does depend then principally on the circulation of black blood in the arteries, we maintain, because, as the colour of any organ is partly derived from the blood it contains, a change in the colour of the blood must affect the colour of the organ; and because in these cases, the colour is deeper, more diffused, and more constant † than in any other.

In most of the cases recorded with any degree of care or minuteness, a great sensibility to cold, as well as a diminished temperature of the extremities or surface generally, has been particularly noticed. This symptom is aggravated by cold weather, and during the paroxysm of dyspnœa, while it is relieved by rest, coverings of flannel, and the warm bath. Nasse and Farre seem to have been the first who thought of ascertaining by the thermometer to what extent this variation proceeded, and in the small number of cases in which it was tried, were surprised to find the temperature of the internal parts maintaining its usual elevation, while on the external it varied considerably, as much as from 74° to 98° Fahr. It would, therefore, appear, that it was rather a want of power to resist cold, than any diminution in the evolution of heat, on which this symptom depended. We have placed this under the head of lesion of the respiratory function, because it seems pretty certain that the evolution of animal heat, is intimately connected with the changes which the blood undergoes in respiration, however difficult or inexplicable this process may be.

Nutrition.—The integrity of any one function, may be perhaps justly said to depend, on the integrity of every other function, so intimate is the sympathy of the several parts of the human body. We do not, however, feel inclined to refer the defective nutrition observed in these cases of malformation, to so general a principle; it would seem to depend, rather on the anormal state of the blood itself, thus rendered unfit for its proper nutritive office. This symptom varies in degree, but is seldom altogether wanting. In some, it shows itself in a general weakness of the whole body; the patient has been confined to his bed from birth; the size is unusually small; the whole system appears torpid; and the senses are often imperfectly developed. Sometimes there is emaciation,[*] especially in the lower extremities; Dr Hunter,[†] when speaking of such a case, forcibly says, "and when I looked upon his legs particularly, I could not but think of the limbs of a wading water-fowl." In some cases the brain seems to have been but imperfectly formed, if we judge from the childishness or idiocy which often accompanies them;[‡] though in others, the intellectual faculties seem to have been unimpaired.[§] The male organs of generation in a case mentioned by Farre,[||] showed no signs of puberty at the age of 22; in a more recent case, in a female of 20, the catamenia had never appeared;[¶] so that it appears probable that these organs suffer some retardment in their developement. Malformations of the fingers and toes have been observed by many authors.[**] These parts become, "clubbed or bulbous," rough with warty excrescences, and the nails large and incurved.

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* The Physiology of the Fœtus, Liver, and Spleen. By George Calvert Holland, M. D. London, 1831. p. 154.

† There are three cases on record, (vid. Corvisart, p. 296, Arch. Gén. T. iii. p. 336, and Farre, p. 15.) which are exceptions to this remark, for in these, either the skin was constantly pale, or it was sometimes pale and sometimes purple during the paroxysm. In the first of these cases, the orifice of the pulmonary artery was very much contracted, and it is therefore equally inexplicable on any other supposition hitherto adduced.

Scleroma, or binding of the skin, a peculiar disease of the subcutaneous cellular tissue, has been observed in children whose hearts were malformed, and M. Breschet,[††] as well as some of the Italian pathologists, have imagined they have traced some connection between them. We are inclined, however, to consider these cases rather as coincidences than as causes and effects.

If, to the symptoms already detailed, we add frequent severe pains of the chest and epigastrium, occasional diarrhœa, in some perspirations, and towards the conclusion, œdema of the face and extremities, I believe we shall have enumerated most of the important phenomena presented by congenital malformations of the heart.

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[*] Dr Pulteney, (in the Med. Transactions of the Coll. of Phys. of London, 1785,) communicates a case in which the whole body was extremely loaded with fat. I do not know of any similar instance.

[†] Dr Hunter's Med. Observations, &c. Vol. vi. p. 300.

[‡] Farre, p. 38. Johnson's Med. Ch. Review for December 1830, p. 230

[§] Farre, p. 36.

[||] Ibid. p. 38.

[¶] Med. Chirurg. Review, Loc. Cit.

[**] Journal Complém. T. iii. p. 301.

[††] Béclard, Anat. Gén. 1823, p. 153, and Craigie's Elements of General and Pathological Anatomy.

On the subject of diagnosis little need be said after so long a catalogue of symptoms. Though it is true that few, if any of these, have not at times failed, yet there are generally a sufficient number of them, and these occurring in a certain relation, to establish the nature of the affection. In early childhood, diseases of the heart from any other cause than congenital malformation are extremely rare. At a more advanced age, when the symptoms have not been present, or at least not noticed from birth, the diagnosis becomes more difficult. The dark colour of the skin; the paroxysms of dyspnœa, easily excited, often periodical, terminating in asphyxia, and that again in sudden relief; the emaciation, or imperfect developement of parts; the sensibility to cold; the hypertrophy or dilatation of the right side of the heart; and the absence of disease in the lungs or other organ, which could account for any of the symptoms, are the signs on which we must chiefly rely, in determining the nature of such cases. It must, of course, be remembered that these symptoms are modified, according to the period in which the disease is seen. In the first stage, we have little more than unusual shortness of breath, emaciation, and occasional palpitations, with some darkness of the surface. In the second, when it becomes combined with other morbid states, we have the pain of chest, habitual dyspnœa, irritability of temper, frequent paroxysms, and constant purple skin: while, in the last, there is torpor of the senses, the colour almost black, œdema of the extremities, and speedy dissolution.

Treatment.

The treatment of these affections may be discussed in a few words; it can only be palliative. The chief indications appear to be, to remove any cause exciting the recurrence of a paroxysm, and to relieve it when present. The first indication is best fulfilled by absolute rest; low diet, but such as contains most nutriment in a small compass, that the stomach may not be distended; absence of any excitement to the feelings or passions; diaphoretics; and the enjoyment of a moderately warm, regulated temperature. The last, by the abdominal decubitus; frictions with flannel; or still better, the warm bath. To speak of the use of opiates, purgatives, and in the last stage, diuretics, is unnecessary. Farre [*] has ingeniously supposed, that the skin in these cases may, to a certain extent, compensate for the imperfect manner in which the respiratory function is performed; and it is by acting on this surface, he is inclined to think, we must expect to afford the greatest relief. From the well known sympathy between the liver and lungs, and from the capability of the former organ to take on vicariously the function of the latter, as established by Tiedemann, it is not impossible, that, by stimulating this viscus to increased action, some of the bad effects resulting from mal-oxygenation of the blood might be prevented.

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[*] Farre, Op. cit. p. 45.

Such, however, are but at best mere conjectures. For the present, we can only consider congenital malformations in common with many other organic lesions, among the *opprobria medica;* and must therefore content ourselves, with such palliative remedies as experience shall prove most efficacious.

ART. III.—*Case of Axillary Aneurism cured by tying the Subclavian Artery.* By WILLIAM FERGUSSON, Fellow of the Royal College of Surgeons of Edinburgh.

MARK ROBSON, æt 60, from Kelso. In the right axilla there is a large pulsating tumour extending under the pectoral muscles as high as the clavicle; a portion as large as an orange projects into the axilla; and on being handled, its contents appear very fluid. The skin over the whole tumour is of a natural colour, but the veins appear considerably enlarged and somewhat tortuous.

The man thinks that the disease has existed for more than two years, although for many months it was scarcely perceptible. It has only been within these six weeks that it has increased rapidly to its present state, which is, as near as I can guess, about the size of a large fist. The pulsation in both arms is alike, about 80. The heart and arterial system elsewhere appear perfectly healthy. No cause can be assigned for the original appearance of the disease; but the patient is inclined to think that he might have got a *rack* in the arm during some of his fits of drunkenness,—a vice to which he has been strongly addicted throughout the last forty years of his life. He was originally bred a cobbler to trade; but during the above period, his principal occupation has been to attend all fairs, races, and elections of members of Parliament, within fifty miles of his native place; on which occasions he had frequent opportunities of indulging in his favourite habits.

At a consultation with Sir George Ballingall, Dr Simson, Mr Miller, and Mr Purves, surgeon, from Kelso, the operation of tying the subclavian artery was decided on, and in every respect, with the exception of the man's advanced age and his previous habits, the operation appeared to them to afford a fair chance for the patient's life.

May 12th, 1831.—I accordingly performed the operation in the presence of fourteen of my professional friends, among whom were Sir George Ballingall, Dr Knox, Dr John Campbell, Dr Simson, and Mr Purves. I made an incision through the integuments at the root of the neck, parallel with the clavicle, and a little above it, which extended from the middle of the breadth of the sterno-cleido-mastoid muscle, outwards to the anterior margin of the trapezius. I then divided the fibres of the *platysma myoides*, and cautiously cleared the lower part of the external jugular vein, which was held aside with a blunt hook during the remainder of the operation. The lower belly of the omohyoid muscle was then exposed, and after cutting through the layer of pretty dense cellular substance which binds it to the clavicle, I experienced no difficulty whatever in breaking down the loose cellular membrane, lying between me and the artery, with the handle of the scalpel. Several veins were exposed during this part of the operation, running towards the subclavian and internal jugular, which, although frequently of very considerable size during expiration or the struggles of the patient, I was enabled to avoid injuring, by using the handle of the scalpel as much as possible. I exposed the anterior scalenus muscle, which was effected the more readily, by cutting through a few of the fibres of the clavicular portion of the sterno-cleido-mastoid muscle;* and then I came immediately upon the artery lying in its usual situation. Here, unless I had been perfectly familiar with the position of the vessel, I would not easily have discovered it; for not one of the individuals who assisted me could detect the slightest motion or pulsation, even when the finger was placed against the vessel. I had no difficulty in introducing an aneurism-needle, provided with a ligature, under the artery; and then by compressing it over the needle, all present were at once convinced that it was the vessel, as the tumour fell flaccid in an instant, and all pulsation ceased in it as well as in the arteries at the wrist. I tied the ligature with my fingers alone, having no necessity for using any of the various instruments recommended in cases where the artery lies deep; and as the thread was very thin, (common purse-silk,) I left both ends hanging out of the wound.

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* This is a proceeding which I would always adopt in future, whenever this portion of the muscle was extensively attached to the bone; and more particularly, if I thought there would be any necessity for cutting a portion of the anterior scalenus, in order to trace the artery nearer the heart. When Dr Gibbs, of St Petersburgh, tied the suclavian, he cut through the whole of the clavicular portion of the sterno-cleido-mastoid, and found that by doing so the operation was much facilitated.

I several times, during a long-continued expiration, observed the internal jugular swelling over the surface of the anterior scalenus muscle. I also saw a large artery, which I took to be the deep cervical, coming off from the subclavian, between the scaleni muscles, and was careful in tying the ligature to keep it as far from that vessel as possible.

During the operation the *margin* of the anterior scalenus was of essential service in guiding me to the artery, and I found in the living body, as I have very frequently experienced in the dead, that the tubercle on the first rib into which that muscle is inserted was not to be depended upon, as it is never so distinct when this muscle is present as on the macerated rib, on which it forms a very distinct prominence.

In consequence of the clavicle being a little raised by the size of the tumour, the artery was situated at a very considerable distance from the surface, more than two inches; yet, notwithstanding the depth of the parts, I scarcely ever saw a less bloody cutting operation, for I am sure there was not half an ounce of blood lost.

I closed the wound with stitches, and covered it with a small piece of caddis.

From the day of the operation up to the 13th of June, nothing very remarkable occurred in the case. Pulsation never returned in the tumour; but from the evening of the day on which the operation was performed, it could occasionally be felt at the wrist. The patient often complained of pain about the lower third of the arm, but this gradually went off. The incision had completely healed, saving the point where the end of the ligature hung out. The margins and neighbouring parts were thrice attacked with erysipelas, which was checked by the application of cold wet cloths.

On the 13th June, the ligature came away after a smart tug, and a portion of the artery half an inch long, and about half its circumference, came along with it. I have no doubt from the direction in which it came as I pulled it out, that it had been nearer the heart than the ligature, and from its length it must have come off near to the large artery, which I observed arising from the subclavian during the operation. When the ligature was removed, it appeared that that part of it which lay in the wound was 2¼ inches long, showing how deep the vessel must have been before the operation. No blood followed the removal of the ligature, and the portion of the artery which came along with it must have been separated from the other parts for many days, as it was quite putrid, and had a very offensive smell. During the whole of this day he felt remarkably well. On the 14th, when I visited him in the morning, I found he had got little or no rest during the night. He complained of nothing else. however. There appeared to me to be a very slight blush in the neighbourhood of the wound, and a thin fluid was discharged from the opening. In the middle of the day, when my friend Mr Miller saw him, he was very uneasy, complained of pain in the situation of the sac, which was increased on pressure, and the sore appeared larger than usual under the clavicle, but in the axilla it was of its former size. Cold wet cloths were applied over the wound and tumour, and Dr Campbell saw him shortly afterwards, and approved of what had been done. When I visited him at four o'clock, he was much better, but still complained of pain in the tumour, which I observed had increased much in size since the morning. He had slight headach; pulse 90; and little or no appetite. His bowels were kept open with small doses of castor oil, and the cloths were kept constantly applied. For several days he was in a very uncomfortable condition; the tumour increased rapidly at one time, and as rapidly diminished; but it never became as small as it had been previous to the removal of the ligature. On the 16th, a little blood was observed to ooze from the wound, but it soon stopped. I was sent for at seven o'clock on the morning of the 17th, in consequence of the bleeding having recurred; but found it had ceased before I arrived; about half an ounce in quantity having been lost. The patient said it spouted past his ear with considerable force, but it was stopped by his wife placing her finger on the orifice of the wound, which was now not larger than that made by a lancet in opening a vein in blood-letting. The swelling had increased very much over night, and I was inclined to think that blood was getting down in front of the tumour, but where it came from was a matter not easily decided on. During the day I kept several assistants sitting by him in case the bleeding should return, but fortunately it did not. I dressed the wound at three o'clock P. M. and squeezed out several small sloughs. In the evening his pulse was 100, but he felt pretty well. On the 18th, he was rather better, and the discharge from the wound, which the day before had been thin and bloody, was improved. Sir George Ballingall and Dr Knox saw the patient, and it appeared to them, as it now did to me, that an abscess was forming in front of the tumour. By their advice the patient was removed to a lodging in the vicinity of the town, that he might have the advantage of a change of air. On the 20th, fluctuation appeared so distinct that I was induced to open the abscess, which I accordingly did, and squeezed out a considerable quantity of very fetid brown-coloured fluid. As the matter was very deeply seated, and it was in consequence necessary to pass the bistoury an inch and a-half under the skin, I was unwilling to make a large cut at the time; but by the recommendation of Sir George Ballingall, I afterwards made it extensive enough to allow a free passage for the matter, which was daily discharged in considerable abundance. Poultices were applied for a few days at first, and when these were discontinued, compresses were placed over the tumour, and kept there by a roller passed round the body. He had a bottle of ale and a glass of port wine every day, and whatever food he wished for. Under this treatment the discharge from the wound gradually assumed a better appearance, and diminished in quantity. A communication which existed between the wound, above the clavicle and that below, closed up, and the patient speedily recovered in health and strength, so as to be able to take exercise in the open air. On the 8th of July, the opening above the clavicle, which was very small, suddenly began to ulcerate, and in twenty-four hours a cavity was formed sufficient to admit the end of the thumb. I touched the whole surface with lunar caustic, which had the desired effect of checking the ulceration. After this the cavity gradually filled up, and on the 15th of July it was nearly healed. As I now considered him completely out of all danger, I sent him off to Kelso, trusting that his wounds would soon heal when he got to his native air; and I have since had letters from my friend Mr Stuart, surgeon there, to whose kindness I am originally indebted for the case, saying that his wounds are healing fast, and that he considers the cure is perfect, the tumour having completely disappeared; indeed were it not for the opening which had been made into it, there would be difficulty at first sight in saying on which side the disease had existed.

The above case appears to me interesting in many points. It shows that in advanced age, for the patient, although certain that he is sixty, thinks himself several years older, and even when the constitution has been much shattered by previous dissipation, we are justified in recommending an operation, and holding out a tolerable chance of success. Only a few weeks previous to his coming under my charge, he had occasion to travel a distance of forty miles,—a journey to which he took nearly a month, having scarcely been sober during the whole of that period. It shows also, that, notwithstanding the very considerable depth of the artery, in consequence of the elevation of the clavicle, no difficulty was experienced in passing the ligature under it, and tying the knot with the fingers alone. The former was perhaps more easily accomplished in consequence of the shape of the needle I used; and the latter, I have no doubt, was so easily done, from my having cut a part of the clavicular portion of the sterno-cleido-mastoid muscle.

When I had the honour of assisting my much respected teacher in surgery, Professor Turner, he used to recommend in his lectures a needle of the shape annexed, more particularly for passing a ligature under the subclavian artery. The concavity on the back of the instrument is intended to allow it to play over the clavicle, as around an axis, when the handle is depressed in raising the point.

I have often used it on the dead body; and although in most cases I think the common aneurism-needle will be found perfectly sufficient, I would always have such a one by me in case of difficulty; for, from its simplicity, it appears to me decidedly superior to Weiss's, or any of the others that have been described as being of use in this operation. A great matter to be attended to is the selecting of an aneurism-needle, with the hole for the ligature as near the point as possible. In every case where difficulty has been experienced in putting the ligature under the artery, we are told that it was in consequence of the operator not being able to raise the point of the needle, so as to get hold of the ligature. Now, by using a needle with the eye very near the point, there is no necessity for the point being raised at all, as, by merely causing it to project beyond the artery for about one-eighth of an inch, the ligature can then be easily raised with the point of the forceps, or by a hook cautiously passed under it. This appears to me the principle on which Weiss's needle is constructed; for, unless its point can be passed beyond the artery, the surgeon cannot see to adjust the complicated hook and lever intended to draw up the spring and ligature. I would have a needle much smaller than Weiss's,—a common-sized needle in fact, with the eye almost as near the point as it is in his, and the surgeon to use the hook or forceps,—instruments with the use of which he is naturally far more familiar than that of the hook and lever in Weiss's.. When arteries are tied in the living body, I see no use for disturbing them in their position, by awkward attempts to raise the point of the needle,—a proceeding which, from repeated trials to the contrary, on subjects and on living animals, I am satisfied in my own mind is totally unnecessary.

Although the ligature remained on the artery much longer than usual, from the 12th of May till the 13th of June, still I think that this circumstance contributed greatly to the patient's safety; for had the portion of the artery which came along with it separated sooner, there can be little doubt that hemorrhage, probably to a fatal extent, would have been the consequence.

The inflammation and suppuration of the aneurismal sac is always an unpleasant occurrence in the treatment of this disease; but although under such circumstances many cases have terminated fatally, I am nevertheless inclined to think the danger in some instances more imaginary than real; for in several of the cases on record, where the subclavian has been tied for axillary aneurism, the tumour has afterwards burst, and still the result has been favourable. Indeed, in the very first instance in which the operation proved successful, that operated on by Dr Post of New York, the tumour burst in a few days after the ligature had been applied, and yet the cure went on rapidly.

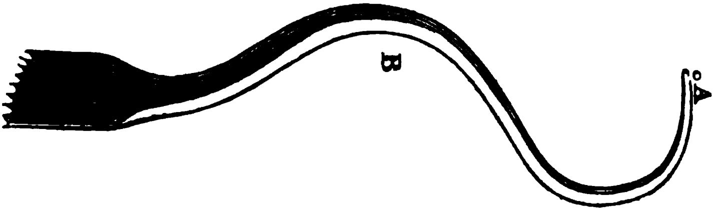
In the report of the case of Mark Robson, I have said that matter appeared to be forming in front of the tumour; but I have no doubt that the tumour itself was affected at last, from the circumstance of clots of fibrin passing out with the pus occasionally, and from its consequent rapid diminution in size.

Aneurism-Needle.

A. A mark opposite the part where the eye of the needle should be.

B. Concavity intended to play over the clavicle. This concavity may be made much larger, should the elevation and size of the clavicle require it.

Whilst introducing the point of the needle under the subclavian artery, the instrument should be held in a horizontal position, the surgeon's hand being over the shoulder; then, by carrying the point under the vessel from before backwards, and raising the hand gradually at the same time, the concavity on the back part of the needle comes to be directly over the clavicle, when, if necessary, the point can be raised considerably without disturbing the position of the artery.



6, *Hill Square*, 25th *July* 1831.

Art. IV.—*On Diseased States of the Kidney connected during Life with Albuminous Urine; illustrated by Cases. Part I.*

By James Craufurd Gregory, M. D. F. R. S. E. Fellow of the Royal College of Physicians, and one of the Physicians to the Royal Infirmary of Edinburgh.

THE fact of the intimate connexion between a peculiar organic disease of the kidneys and coagulability of the urine during life, first established by Dr Bright, has not, I believe, attracted, either in this country or abroad, that degree of attention which its frequency and importance would seem to demand. M. Andral, indeed, in his late excellent work on Pathological

Anatomy, has briefly alluded to the subject, but merely to announce, that, in the third volume of his *Clinique Médicale*, he had published, before Dr Bright made known the result of his investigations, a case of dropsy going along with a granular state of the kidneys, without appreciable alteration of any other organ. It is not to be supposed that so zealous and distinguished a pathologist as M. Andral should fail to discover the connexion between certain dropsies and organic disease of the kidney; but he has nowhere in his own works adverted to the important fact,—the connexion between such disease and an albuminous impregnation of the urine; and it is remarkable that the state of the urine is not even alluded to in the case to which he has referred, although I have no doubt, from the history of the disease, that, had it been tried, it would have been found albuminous. The connexion, moreover, between dropsy and disease of the kidney, M. Andral is no doubt aware, had been recognized by some of the older authors,—by Van Helmont, for example, who distinctly lays down the kidneys as the seat of the disease in dropsy,* and Morgagni, who, among other cases which must be referred to this head, has given one of anasarca, followed by diarrhœa, in which no organ was found diseased except the kidneys. In these, to use his own words, "*structura intima confusa apparuit*;" and they contained, both externally and internally, some of those small cysts filled with serum, that occur so frequently in this peculiar disease. Those who are at all familiar with the appearances which it presents, will at once, I think, recognize it in this case, from Morgagni's short description. †

Some of the more recent writers on dropsy have even gone farther, and have connected this state of the kidneys with coagulability of the urine. But it is curious and instructive to observe, that these authors, apparently led away by the preconceived notion of dropsy being, in most cases at least, a general disease of the system without local affection, have neglected to draw the very obvious conclusion to which their own cases would naturally lead. Thus the late Dr Wells, in a paper on the presence of the red matter and serum of the blood in the urine of dropsy, ‡ has given only three cases of persons who had died dropsical with coagulable urine, whose bodies were examined after death; and in all three, the kidneys were found diseased. In the first, three hydatids of the size of horse beans were found in the substance, and attached to the surface of the right kidney. The state of its internal structure is not mentioned. In the second, "the kidneys were much harder than they usually are. Their cortical part was thickened and changed in its structure, from the deposition of coagulable lymph, and there was a small quantity of pus in the pelvis of one of them." And in the third, "the kidneys were larger and softer than if in the healthy state; and on the outside of both were several vesicles, partly imbedded in their cortical substance, and containing an amber-coloured fluid. The greatest of them was of the size of a hazel-nut." Yet he draws no inference from these facts, and thinks it necessary to state, that he does not conclude from these appearances that the kidneys are always diseased, when the urine in dropsy contains much serum, and that the morbid appearances in the kidneys might be altogether unconnected with the morbid secretion.

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* Ortus Medicinæ, Cap. Ignotus Hydrops.

† De Sed. et Caus. Morb., Epist. xlii. Art. 11.

‡ Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, Vol. iii. 1812. Read 1811.

In like manner, out of nine cases with dropsy and coagulable urine, in which the bodies were examined after death, published by Dr Blackall, the kidneys were found diseased in no less than five; and in one, more especially, he states, that "the kidneys were large and hard, and their structure confused, particularly in respect to the distinction between the cortical and medullary part." He himself allows that the kidneys had been found diseased in an unusual proportion of his cases as well as of those of Dr Wells; but says, in another place, that it must be left for future observation to determine what relation this affection of the kidneys bears to the discharge of serum by the urine.* Had he not been misled, partly by his own peculiar views on the subject of dropsy, and partly, as it would appear, by a very erroneous distinction, first suggested by Mr Cruickshank, †—namely, that in general dropsy unconnected with local disease, the urine coagulates on the application of heat, or the addition of nitrous acid, while in that proceeding from visceral disease it does not coagulate at all,—Dr Blackall would probably have followed up the train of investigation so unexpectedly laid open to him by his own cases, and might thus have anticipated the later researches of Dr Bright.

I do not know whether the urine had been tried during life, and the kidneys examined after death in all the fifteen cases, published by Dr Crampton in his Clinical Report on Dropsies.‡ But of the only cases, three in number, in which they are expressly mentioned, they are stated in one to have been much enlarged and soft. Dr Alison informs me that he had noticed the connexion of dropsy, where the urine was coagulable, with hardened and tuberculated kidneys, in his Clinical Lectures as far back as 1823.

Hence it appears that neither Dr Bright nor M. Andral have any claim to priority in regard to the fact of the connexion between dropsy and disease of the kidney. But to Dr Bright is incontestably due the merit of having first pointed out the frequency of this connexion,—of having accurately described the symptoms and appearances on dissection in these cases,—and above all, of having first established the important fact, that this peculiar organic disease of the kidney can be detected with more or less accuracy during life, by its connexion with coagulability and low specific gravity of the urine.

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* On the Nature and Cure of Dropsies, &c. 3d Edition. 1818.

† Rollo on Diabetes. 2d Edition. 1798. p. 447.

‡ Transactions of the King's and Queen's College of Physicians in Ireland, Vol. ii. 1818.

Since the publication, however, of Dr Christison's able commentary upon Dr Bright's researches, in this Journal, I am not aware that any other physician in this country has turned his attention particularly to the subject. This, considering the importance and dangerous tendency of the symptoms which usually accompany this disease of the kidney, I should have thought the more extraordinary, were it not that, in looking over the journals of our Infirmary, in which it is certainly exceedingly frequent, (as appears by the published statements of one of the physicians attached to it,) I have met with a number of cases which have occurred since the period of that publication, and in which the state of the urine was never ascertained, although, from the similarity of the symptoms to those of other cases of this disease, I have no doubt that it would have been found albuminous; and had I not been present at many dissections in the same hospital, which alone revealed the existence of the disorder.

The only public notice I have observed taken of the subject in this country, has been by two distinguished clinical teachers, Dr Elliotson of London and Dr Graves of Dublin. By the reports of the lectures of these gentlemen,* it would seem that neither of them is satisfied as to the correctness of Dr Bright's views regarding the supposed intimate connexion between organic disease of the kidney and coagulable urine; and Dr Elliotson is of opinion, from the number of persons he has seen affected with dropsy and albuminous urine, who were restored to perfect health, that, although the urine is generally albuminous when there is organic disease or great congestion of the kidneys, yet we cannot necessarily conclude from the presence of albuminous urine that the kidneys are the seat of these morbid conditions. These statements do not altogether accord with the result of our experience in the Infirmary of this city. That the urine becomes at times albuminous in certain peculiar states of the general system, or of the kidneys themselves, unconnected with organic alterations of structure in these organs, is a fact of which no reasonable doubt can be entertained, as I think will appear by the sequel. But when the urine is coagulable, and at the same time decidedly low in density, while it is below the natural standard in quantity,—when this state of the urine has existed for some time in a more or less marked degree,—and when it is accompanied by dropsical effusion in some of its forms, particularly slight but obstinate œdema of the extremities and face,—or when, in the absence of dropsy, which is by no means a constant symptom, it is attended by untractable vomiting or diarrhœa, it would appear from the concurrent testimony of all the physicians connected with the Infirmary whose attention has been directed to the subject, that in these circumstances it is a sign of organic disease of the kidney on which we may rely with much confidence. During the two years which have elapsed since the publication of Dr Christison's paper on the subject, about thirty fatal cases, with or without dropsy, have occurred in the Infirmary, in all of which the urine during life was albuminous, and, in every case in which the specific gravity was examined, low in density. Dissections were obtained in twenty-four of these, and in every one of the twenty-four, the kidneys, as will presently appear, exhibited, in a more or less marked degree, the peculiar appearances described by Dr Bright. This I merely give as the result of our late experience on the subject in the Infirmary of Edinburgh, and would by no means be understood to contend for the universality of the fact,—a point which can only be determined by a much more extended series of observations than one hospital can furnish. But taken along with those published by Dr Christison, and along with many others, the histories of which are imperfect, these cases certainly appear to afford at least a strong presumption in favour of the ingenious views of Dr Bright.

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* London Medical Gazette for December 4th 1830, and February 5th 1831.

The argument drawn by Dr Elliotson, from the fact of the apparently perfect recovery of many patients who had laboured under dropsy with albuminous urine, is liable to fallacy; for the symptoms attending this peculiar disease, besides being in general slow in their progress, frequently disappear entirely for a time, although the urine continues albuminous, and recur sometimes without an obvious cause, and prove fatal after an interval of many months or even years of apparent good health. This fact we have had frequent opportunities of verifying, and several remarkable examples of it will be found in the subsequent part of the present paper. It appears to me, therefore, that no great weight can be attached to conclusions drawn from this source, against the supposed existence in such cases of organic disease of the kidneys, unless the ulterior histories of these patients shall have been accurately ascertained. In regard to the dropsy with albuminous urine which succeeds scarlet fever, and which is seldom a tedious or dangerous disease in this country at least, we know from the observations of

Dr Wells,[*] that the urine contains a considerable quantity of blood, indicating a state of congestion at least, if not an inflammatory state of the secreting organs; and a remarkable and very important case has been given by Dr Bright,[†] in which an acute and severe attack of general anasarca, with coagulable and bloody urine, had abated, when the patient was suddenly cut off by œdema of the epiglottis and glottis, and no other organ was found diseased except the kidneys, which were large, soft, of the darkest chocolate colour, and evidently gorged with fluid blood, although they exhibited no organic change of structure. It is not improbable that a similar change may have been the first step in the process of disorganization in many of the cases of disease of the kidney at present under consideration.

Dr Graves, who considers that an albuminous state of the urine may occur in dropsies of the most opposite pathological characters, and unconnected with disease of the kidneys, is yet of opinion, as far as the observation of two cases can be trusted. that the occurrence of pale urine containing a small quantity of albumen, and of unusually low specific gravity, indicating a diminution in the quantity of urea, may be considered as characteristic of chronic hepatitis. This statement is certainly at variance both with our experience and that of Dr Bright. The liver has been undoubtedly found altered in structure in a great number of the cases in which the urine has been coagulable, and the kidneys have been diseased; and this, I should be inclined to say, in the same relative proportion as it is found diseased in cases of phthisis; and the change which it undergoes is perhaps analogous to that which takes place in the kidneys. But this change is by no means constant, as will appear by reference to some of the subjoined cases; nor, when it does exist, does it appear to bear any fixed relation to the degree or extent of alteration in the kidneys. And we know, besides, from the cases published by Dr Bright, as well as from daily experience, that extensive alteration of structure is frequently found in the liver, without coagulability of the urine, if there is no concomitant disease of the kidneys,

However this matter may be, enough, I think, has been said to show that the whole subject is one of great importance, and demands further investigation and additional facts; particularly as to the complication, so frequently observed, of this disease of the kidneys with various affections of distant organs. These it is the object of the present communication in some measure to supply. I propose to class the following cases under four heads, namely,

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[*] Observations on the Dropsy which succeeds Scarlet Fever. Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, Vol. iii.

[†] Medical Reports, Case xiv. Plate v.

I. Fatal cases in which, along with dropsy and coagulable urine, the most prominent symptoms were generally vomiting or diarrhœa, or both. II. Fatal cases in which, along with dropsy and coagulable urine, the most prominent symptoms were those connected with the organs of respiration and circulation. III. Fatal cases in which there was no dropsy, including those in which the urine had not been examined during life, and the disease of the kidneys was only detected after death. And, IV. Cases in which the patients were either relieved or restored to apparent health at the time of their dismissal.

I. *Fatal Cases in which, along with Dropsy and Coagulable Urine, the most prominent symptoms were generally Vomiting or Diarrhœa, or both.*

Case I.—*Margaret Turner*, aged 38, was admitted into the Infirmary of Edinburgh, under my care, on the 15th of June 1829, affected with œdema of the legs and arms, swelling of the abdomen, with obscure sense of fluctuation, and occasional uneasiness across the epigastrium. Her pulse was frequent, and rather small; her tongue white; her bowels confined, and her urine very scanty. She reported that the catamenia had not appeared for two years past, and that since that time she had been subject to leucorrhœa. She had first observed the œdema about four months, and the enlargement of the abdomen about a fortnight, before her admission; and about the same time her urine became scanty. She attributed her complaints to exposure to cold. On being questioned on the subject, she said that she had been subject to palpitation for several years; but no increased impulse or other sign of disease of the heart could be detected by careful examination, and she made no complaint of palpitation during her residence in the Hospital. There was no apparent enlargement, nor any symptoms of an affection of the liver. Under the use of digitalis and squill, cream of tartar, and gentle purgatives, the urine became somewhat more copious; and on the 20th of June it was found to coagulate so strongly, as to become quite opaque on the application of heat. Its density was not ascertained. The œdema of the legs and the swelling of the abdomen were at the same time somewhat diminished. On the 21st she complained of tormina and pain of loins, on account of which a blister was applied to the lumbar region. On the night of the 22d she had a fit of dyspnœa relieved by a draught of ether and laudanum; and next day her breathing was rather frequent, and her pulse 116. The œdema increased in the arms, and now affected the integuments of the abdomen. On the 24th, she had frequent watery stools, which, as well as the urine, were passed involuntarily. On the 25th, notwithstanding the free use of stimulants, she had become comatose. Her respiration was now slow, noisy, and interrupted, her features collapsed, and her pulse imperceptible. No urine could now be obtained, and she died early next morning.

Inspection.—Both kidneys were larger and softer than natural. They were smooth and of a pale-yellow colour, slightly mottled externally. On a section being made, their internal structure was found to be much altered. The fibrous structure of both the cortical and tubular portion was in many places obliterated by the deposition of a yellowish granular matter, as described by Dr Bright. There was no disease of any other organ of the abdomen, nor of the heart or lungs. It does not appear from the account of this dissection inserted in the journal, whether the head was examined or not.

CASE II.—*Mary Carmichael*, aged 27. This woman is mentioned by Dr Christison in his observations as being at that time under his care; and her case was afterwards published by me in the 104th number of this Journal, in reference to the disease of the lungs under which she laboured. It is therefore only necessary to state here, that so early as the year 1827, when under the care of Dr Alison on account of her pectoral complaints, she had œdema of the legs and untractable diarrhœa. When again admitted under the care of Dr Christison on the 4th August 1829, she had, in addition to her pectoral and head symptoms, considerable anasarca and ascites, with scanty urine of low density, and highly albuminous. The urine of this woman is stated by Dr Christison to have contained fourteen parts of albumen *per* thousand,—the greatest quantity of albumen which he had found in the urine in any of the cases which had at that time come under his notice. She was bled on the 7th to the extent of twenty-two ounces. The blood was very buffy and much cupped. The specific gravity of the serum was 1022.5, and at the same time the urine, which was only two pounds in quantity during the twenty-four hours, and very red, was 1011.5 in density, and yielded a copious coagulum on being heated. She had troublesome vomiting and diarrhœa for some time before she was transferred to my care, on the 4th of September. Her speech was affected, her faculties impaired, and she had some muttering delirium. But these last symptoms were probably connected with the organic disease of the brain under which she laboured. She died comatose on the 8th of September.

Inspection.—Both kidneys were found smaller and harder than natural. They were mottled and somewhat rough externally. Much of the cortical substance had given place to a granular matter of a grayish-yellow colour, which had encroached considerably on the tubular structure.

For the two following cases, I am indebted to the kindness of my colleague, Dr Christison.

Case III.—*Isabella Murray*, aged 27, a woman of intemperate habits, and who had been several times a patient in the Infirmary with rheumatic complaints, was admitted about the middle of August 1829, on account of an attack of acute rheumatism, of which she was cured in the course of five weeks under the use of sudorifics, colchicum, and the occasional application of leeches to the joints successively pained. During this illness my attention was not drawn to the urinary secretion. At the time of her dismissal she was very leucophlegmatic in appearance, which, however, was ascribed merely to her tedious attack of rheumatism.

On the 30th of September, she was re-admitted with all the symptoms of a severe attack of inflammatory dropsy, which commenced four days previously, and was ascribed by her to exposure to wet and cold. She had great dyspnœa; husky dry cough; dulness on percussion and obscurity of the sound of respiration over the whole lower part of the right side of the chest; pain at the pit of the stomach, excited by coughing; considerable swelling of the abdomen, and much œdema of the limbs and face. The density of the urine was 1014, its quantity natural, being forty ounces daily, its colour pale, and a very scanty flaky precipitate was produced by heat. Free blood-letting was resorted to twice, with obvious advantage; and then digitalis, cream of tartar, and a single mercurial pill daily, were administered. On the 4th of October, there was some tenderness in the region of the loins, and pain shooting from one hypochondrium to the other, which were relieved by two applications of leeches. On the 5th the digitalis was discontinued, narcotic symptoms having made their appearance. On the 7th, there was little œdema, and almost no swelling of the belly; but the urine was still only natural in quantity; its density 1015, and its coagulability much the same. On the 17th, the urine was six pounds daily. On the 23d, the mercury was discontinued, the mouth having become tender, and the breath fetid; but these effects soon ceased. From this time till the 6th of November there was no material change. The affection of the chest had disappeared, but the œdema had rather gained ground, although the daily quantity of urine was six pounds. It was 1011.5 in density, and coagulated slightly as before. The digitalis was resumed along with squill. After this the œdema and swelling of abdomen rapidly increased, and the pulse became again more frequent and sharp; yet the urine was never less than four pounds daily. On the 13th, it was found necessary to return to blood-letting, which was twice practised, first to the extent of twenty ounces, and again to thirty ounces on the 15th, with much relief to the general feelings, and considerable abatement of the dropsical swellings. Another attempt was then made to keep down the dropsical effusion by digitalis and cream of tartar, combined with a little mercury; and the urine was in consequence kept pretty uniformly at about five pounds daily, but without effect. On the 2d of December her symptoms had increased so much that I was reluctantly compelled to resort again to blood-letting, which produced as before much temporary relief. On the 10th she for the first time became drowsy; next day her memory was impaired, and she spoke heavily and with difficulty, and the urine at the same time fell in quantity to two pounds daily. On the 12th, she was extremely drowsy, and the dropsical swellings had greatly increased. On the 14th, she was comatose; and on the 15th, she died.

In addition to this narrative, it may be remarked, that after the first action of the mercury she had for a fortnight frequent epistaxis, which, however, she had been occasionally subject to for a long time; and that for ten days before death there was a strong tendency to profuse watery diarrhœa, notwithstanding that laxatives were abandoned and gentle opiates and astringents were resorted to. The blood, which was drawn five times in the course of her illness, was buffy only on the last occasion, and that but slightly; and the serum was scarcely lower in density than usual. During the first three or four weeks of her residence in the Infirmary, the pulsation of the heart was diffuse and strongly felt with the hand; it was sometimes irregular, independently of the digitalis, and there was a pretty loud *bruit de soufflet*.

Inspection.—The heart was found somewhat bigger than natural, the cavity of the left ventricle being enlarged, but the parietes not thickened. The *columnæ carneæ* were partially converted into a firm matter like fibro-cartilaginous substance, and the mitral valve was thickened. The liver was extensively affected with yellow tubercular disorganization of the kind usually observed in whiskey-drinkers, and contained several large solid tubercles. Both kidneys were far advanced in the disease described by Dr Bright, the granular matter having taken the place of the greater part of the tubular structure, and of the whole of the cortical substance. A drawing of the appearances in the kidneys and liver has been preserved.

Case IV.—*Janet Mackay*, aged 25, unmarried, was attacked after exposure to cold and wet in the middle of November 1829, with sore throat, in three weeks with swelling of the legs, and in a fortnight more with enlargement of the abdomen, and occasional nausea, but no vomiting. These symptoms continuing, she was admitted into the Infirmary at the middle of December. At this time the œdema was inconsiderable, and the swelling of the belly was chiefly tympanitic; the internal fauces red; the pulse 112, and small; the urine rather above the natural quantity, extremely pale, 1004.5 in density, and pretty strongly coagulable. She had also great tendency to diarrhœa, and this continued with occasional intermissions, and unaccompanied by pain till near her death, which took place three weeks after her admission. During the interval there was no particular change in the symptoms. The diarrhœa was occasionally checked for a time by anodynes and astringents; the œdema never gained ground; the swelling of the belly decreased somewhat; the urine on the 2d of January was fifty-six ounces in quantity, 1009.5 in density, and distinctly coagulable, and on the 7th it was in all respects the same, except that it had become scarcely coagulable. The sore throat steadily increased, and towards the close was attended first with huskiness, and then almost total loss of voice; and during the three or four last days, there was tenderness in the hypogastrium, increased nausea, and some retching. It is unnecessary to particularise the treatment, because it was confined to the palliating of symptoms, as the disease was evidently far advanced.

Inspection.—Some clear serum was found in the cavity of the chest. In the cavity of the abdomen distinct traces were found of recent peritonitis, namely vascularity of the parietal peritonæum, effusion of lymph over the whole surface of the intestines, and several ounces of sero-purulent matter in the cavity. The intestines were not ulcerated; but the mucous coat of the termination of the ileum and commencement of the colon was very soft, and of a chocolate colour. The kidneys had a distinct granular structure on their whole surface, and internally a grayish yellow granular matter had invaded the whole cortical structure, and almost the whole tubular structure also. The state of the liver is unluckily not mentioned in the report; but my impression is that it was found pale, and not otherwise diseased. There was considerable ulceration on the upper part of the pharynx and larynx; and the epiglottis had been almost entirely destroyed by it.

The four following cases occurred in the Clinical Wards, under the care of Dr Alison, to whom I am indebted for permission to make use of them.

Case V.—*Robert Stewart*, aged 23, of intemperate habits, had been exposed to frequent and sudden alternations of temperature in his employment as a cook. About six weeks before his admission, on the 12th of February 1829, he was seized with pain of the right side of the chest, stretching towards the shoulder, soon followed by œdematous swelling of the face and lower extremities, and gradual enlargement of the abdomen. About a fortnight afterwards he became affected with cough and dyspnœa, which gradually increased. He had been twice bled, and been treated with diuretics without much benefit. At the time of his admission, there was much distension of the abdomen, with distinct fluctuation,—considerable œdematous swelling of the face and legs,—great dyspnœa, with cough and scanty expectoration, and pain on pressure in the right hypochondrium extending towards the umbilicus and the lumbar region. He had frequent desire of micturition, with scanty urine; his pulse was frequent and rather weak; but the action of the heart was pretty strong and diffused. The urine was tried on several occasions, and always found to be strongly coagulable. It scarcely ever exceeded in quantity a pound and a-half daily, although digitalis and other diuretics were pretty freely employed. Its density was not ascertained. Leeches were applied thrice to the epigastrium and sternum, and he was once bled to the extent of six ounces, on account of the cough, dyspnœa and pain, with some relief. But free evacuation could not be employed on account of his state of debility, and on the 17th, it was thought necessary to have recourse to wine in small quantities at a time, as his pulse was small and weak and his tongue dry. At the same time, his symptoms became complicated with much vomiting, and confusion of thought; then much delirium, slight strabismus, and great drowsiness verging on coma. On the 27th some erythema of a pale colour appeared on the left thigh. During the next three days it had spread to the perinæum and scrotum, and the cuticle was raised in various places into vesicles of a livid colour. No urine was passed during the last two days, and a little only flowed on the introduction of the catheter. He had no diarrhœa during the whole course of the disease, and generally required the use of laxatives. It is proper to remark, that at the time of his death, the dropsical swellings were much diminished. He died comatose on the 3d of March.

Inspection.—The middle and lower lobes of the right lung, which adhered strongly to the pleura costalis, were much condensed, and several circumscribed portions presented the peculiar appearances of pulmonary apoplexy. The left lung was healthy. The pericardium adhered slightly to the heart, and contained several ounces of fluid. There was a deposition of lymph on the auricles and ventricles. The left ventricle was much thickened and enlarged. The mouth of the aorta was somewhat smaller than usual. The valves were healthy. There were several pounds of fluid in the cavity of the abdomen, with some effusion of lymph on the inferior surface of the liver, and on the peritonæum lining the parietes in the right hypochondrium. The liver was much enlarged, the anterior margin thickened and rounded, the exterior surface pale and mottled, the substance hard, pale, and granulated. The gall-bladder was distended with apparently healthy bile. The kidneys were much smaller and harder than natural; the surface pale with varicose veins distributed over it; the cortical portion hard, pale, and granular in structure; and the tubular part disorganized, and retaining no fibrous texture, in consequence of the deposition of a yellow matter resembling that of tubercles.

CASE VI.—*William Wilson*, aged 20, a baker, had been in the Infirmary for nearly two months before he came under the care of Dr Alison in the beginning of November 1829. At the time of his admission he complained of constant headach, nausea, acid eructations, green bilious vomiting, and other dyspeptic symptoms. He was subject to palpitation after exercise, and the impulse of the heart was stronger than natural. He stated that his legs were occasionally œdematous, and his urine was scanty. He had cough, which had commenced nine months before, and which he attributed to incautious exposure to cold when heated by working hard in a bake-house. He had been several times bled and cupped, and had used purgatives and other medicines with relief to the cough and stomach complaints. When transferred to Dr Alison's care, he had nausea, increased by the erect position, with occasional headach; he was much emaciated, and complained much of debility. His bowels were slow, and his appetite impaired. He was then using wine, tonics, and occasional purgatives, which were continued for some time with apparent good effect; but on the 16th he had more pain of head, with drowsiness and some impatience of light. His pulse had become frequent, and he had some vomiting. From this period, until a few days before his death, which took place on the 24th of December, the headach and vomiting continued to recur almost daily, and were at times very urgent. He complained also of pain of the eyeballs, with imperfection of vision. He had occasional dyspnœa, with some cough and pain of chest, and at one time pain in the lumbar region. Besides the occasional application of leeches to the temples, he was twice bled on account of the urgency of the symptoms on the 25th and 26th of November, and the blood was buffy. It is unnecessary to pursue the details of the treatment. At this time slight œdema of the feet was first remarked, and the urine was found to be scanty and albuminous. Its density was not ascertained. On the 5th of

December there was enlargement of the abdomen, and on the 17th there was distinct fluctuation. The urine was still albuminous and very scanty, although he had been taking digitalis for some time. The œdema continued slight. Mercurial inunction and calomel were also employed, but his mouth never became affected. During the last few days the headach and vomiting abated, and were succeeded by diarrhœa. Although the pulse at the wrist was very feeble, the action of the heart continued unnaturally strong, and the apex was felt lower than natural. There was much emaciation, debility, and drowsiness. On the day of his death, the œdema and swelling of the abdomen were nearly gone, and hardly any urine was passed.

Inspection.—The arachnoid membrane was found raised by serous effusion beneath it, and there was a larger quantity of serum than usual at the base of the brain. All the ventricles were distended, and the fornix elevated, by serous effusion. There was no marked turgescence of the blood-vessels, and the substance of the brain when cut showed fewer red points than usual.

A few tubercles were found in the upper lobe of the right lung. The lower and posterior part of this lung did not crepitate, and was so much condensed as to sink in water. There was a pretty distinct line of boundary betwixt this condensed portion and the more healthy parts of the lung. The left lung was comparatively healthy. The heart was not larger than natural, but the parietes of the left ventricle were much thickened, and firmer in texture than usual. The ascending aorta was longer and larger than usual, but its coats were healthy, as were also the valves.

There was a very slight deposit on some parts of the mesentery. The mucous membrane of the great intestines was thickened and soft, of a dark colour, and in some places studded with small irregular ulcers. Both kidneys were very small, irregular, and mottled on their surface. The cortical part was much narrower and paler than usual. The structure of the *tubuli uriniferi* was in some places much altered, having lost its natural radiated fibrous appearance. The liver appeared to be pretty healthy.

Case VII.—*Mary White*, aged 23, of intemperate habits, and lately weakened by venereal ulceration, had been seized nine days before her admission into the Clinical Ward, on the 8th of April, 1831, with severe purging, soon followed by swelling of the legs and pain of the loins. At the time of her admission, she had considerable œdema of the legs and thighs. When in the recumbent position, the anasarca became general, affecting the integuments of the abdomen, chest, and head. There was then no enlargement of abdomen. She had no pain of chest, but complained of dyspnœa at night, and cough without expectoration, increased by lying on the right side, but relieved by the erect position. Her pulse was natural, her tongue furred but moist, and she had great thirst. The diarrhœa continued, and she complained of pain across the loins. Her urine was natural in quantity, of very light colour, 1010 in density, and coagulable by heat. She was not aware of any cause for her complaints, but she had amenorrhœa of three years standing. The pain of loins was removed by cupping, and did not recur. But opium, in large doses, by the mouth as well as in the form of suppository, acetate of lead, and various astringents tried successively, failed in checking the diarrhœa, which continued nearly unabated, but without dysenteric symptoms, during the whole course of her illness, along with occasional vomiting. The œdema diminished gradually, and at one time had entirely disappeared in the legs, although there was still some swelling of the face. But towards the end of September the abdomen became enlarged, and there was distinct fluctuation, while the urine became scanty, although she had been taking digitalis and squill for some time. It never exceeded 1012 in density, and was always coagulable. Her mouth was slightly affected by means of calomel and mercurial inunction, but without apparent benefit, and she died on the 9th of May, in a state of great exhaustion and debility, with slight preceding delirium, but without coma.

Inspection.—A considerable quantity of serum was contained in the cavity of the abdomen, and the intestines presented the blanched appearance usually observed in ascites. The liver was somewhat enlarged and indurated, with some appearance of hypertrophy of the gray substance. A few of the mesenteric glands were enlarged, and contained some earthy deposit; but this disease was apparently of old standing. No morbid appearances could be detected throughout the whole course of the small intestines, although they were carefully examined. An ulcer of considerable size was found in the mucous membrane of the sigmoid flexure of the colon where it terminates in the upper part of the rectum. The coats of the rectum were much thickened in the immediate neighbourhood of the ulcer. Two other ulcers were found in the transverse arch of the colon, but there was no thickening of the coats of this portion of the intestines. There was some minute tubercular deposition under the peritoneal covering of the pancreas, and the substance of this gland was somewhat indurated. The kidneys were both large, and presented internally as well as externally a pale granular appearance. The cortical substance was much narrower than natural. The tubular structure seemed healthy. The red or purple colour of the tubuli contrasted strikingly with the pale yellow colour of the granular cortical substance. The left kidney contained a small serous cyst internally, near its convex margin.

No morbid appearances were seen in the thorax. The head was not examined.

CASE VIII.—*Mary Turner*, aged 21, unmarried, had been long subject to rheumatism and occasional palpitation, especially on exertion, and about four months before her admission, on the 9th of June 1828, she had an attack of diarrhœa, lasting for three weeks, and followed by swelling of the feet and ankles, which had gradually increased. At the time of her admission the abdomen was tumid, with indistinct sense of fluctuation, and she complained of general pains and of pain of loins. She had some affection of the breathing when in the recumbent posture, but no cough or strong action of the heart. There were several prominences and depressions, with marks of old ulcerations on the frontal bone, and she had a hard painful swelling with redness of the integuments on the right tibia. Under purgatives and diuretics, the dropsical symptoms abated, and latterly were very slight. But the pain of the limbs and loins continued, and she had occasional nausea and vomiting, with at one time fulness and tenderness in right hypochondrium and epigastrium. On the 25th her pulse became frequent, small, and soft, and her tongue dry. The pain of loins and vomiting became urgent, and were accompanied with diarrhœa. These symptoms were somewhat relieved by the abstraction of eight ounces of blood, which was buffy and cupped, and a little calomel and opium. But the urine, which had previously been copious, became more scanty, and was found to be coagulable. Its density was not ascertained. She became very drowsy, with occasional delirium and subsultus tendinum. The pulse became more feeble and the surface cold, notwithstanding the use of stimulants; the skin assumed a very sallow and yellowish colour, and she died comatose on the 29th of June.

Inspection.—There was no effusion beneath the arachnoid membrane, and the quantity of serum found in the ventricles and at the base of the brain was not greater than usual. There was considerable serous effusion in the cavity of the abdomen, with flakes of soft lymph floating in it; but no distinct marks of inflammatory action could be observed on any part of the peritonæum. The surface of the liver was rough and mottled. Its substance, especially in the left lobe, was harder than natural, and of a deep yellow colour. The gall-bladder contained healthy bile, and the ducts were pervious. The spleen was enlarged, and reduced to a semifluid consistence. There was no disease of the intestines. Both kidneys were much diseased. The *tunica* *propria* of each was quite loose, so that when cut open the gland slipt out. They were unusually large, soft, and flabby. Externally their surface was minutely lobulated, of a pale straw colour, granular, and mottled by numerous blood-vessels in arborescent patches. The cortical substance had almost entirely lost its fibrous structure by the deposition of a minutely granular whitish or yellowish matter, which had encroached upon and compressed the *tubuli* to a great extent. There was considerable vascularity towards the commencement of the tubular portion, giving a mottled appearance to the internal structure. Both these kidneys are preserved in the Anatomical Museum of the University, and one of them is injected. The injection has not penetrated at all into the tubular portions, and much of the cortical substance appears to have been impervious to it. *

I am indebted for permission to make use of the following case, to Dr Duncan and Dr Graham, under whose care it occurred in the Clinical Ward.

CASE IX.—*Elizabeth Cowan*, aged 38, a widow, was admitted on the 26th of February 1831, labouring under severe diarrhœa, with tormina and tenesmus. The abdomen was somewhat distended, with slight pain increased on pressure along the course of the ascending and transverse arch of the colon. There was œdema of the legs, with scanty urine, and she complained of pain of loins, increased on pressure. She had some sore throat, and occasional cough. Her tongue was furred, and somewhat aphthous towards the base, but florid, smooth, and dry at the tip; her pulse was rather frequent. She attributed her complaints to exposure to cold and wet for several hours, while engaged in bleaching clothes, ten days before admission. This was followed in two days by febrile symptoms, headach, vomiting, and diarrhœa, which last had continued. The dejections were said to have been bloody for two days. The œdema had commenced four days before admission, and had been gradually increasing. The diarrhœa proved very untractable. It continued throughout the whole course of the disease with occasional vomiting, and was scarcely affected by large doses of opium. On the 1st of March, the urine was ascertained to be scanty, 1011 in density, and albuminous. It was tried again on the 7th, and also on the day before her death, when it did not exceed one pound in quantity, and was found still very coagulable. The distension of the abdomen increased, with some pain and tenderness about the umbilicus, and pain of loins. She had occasional cough, with mucous expectoration.

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* It is to be regretted, that, with the exception of those cases in which the disease is far advanced, and the kidneys are diminished in size and rough externally, the appearances are almost entirely lost in preparations after they have been kept for a short time in spirits.

Latterly, she became very drowsy, with muttering delirium, aphthous mouth, small and feeble pulse, and contracted pupils. She died on the 10th of March.

Inspection.—There was slight serous effusion under the arachnoid membrane, but there was no unusual turgescence of the blood-vessels, the substance of the brain was healthy, and the ventricles were not distended. There were strong adhesions between the pleura pulmonalis and costalis on both sides, but chiefly on the right, where there was much thickening of the pleuræ, with a deposition of soft yellow lymph between them, and on the surface of the lungs. Both lungs were infiltrated with serum, and in some places condensed. The heart was natural.

About one pound of very limpid serum was found in the cavity of the abdomen. The surface of the peritonæum was everywhere pale. There was some appearance of increased vascularity in the mucous membrane of the colon, particularly along the transverse and descending arch. A few small ulcers with defined edges were observed in various parts of the colon; and a number of small yellow circular elevations, having somewhat the appearance of tubercles, were found crowded closely together at the lower end of the ileum, and scattered at greater distances over the larger intestines. There was no appearance of increased vascularity around these elevations. The liver was healthy.

The right kidney was considerably diminished in size. They were both irregular, and somewhat rough externally, and of a pale yellow colour. Internally, the fibrous structure of the cortical substance was obliterated, and its place occupied by the deposition of a pale yellow granular matter. Several of the *tubuli uriniferi* were also obliterated by a similar granular deposition.

Dr Home has obligingly given me permission to publish the two following cases which occurred under his care in the Clinical Ward.

Case X.—*James Jarvis*, aged 30, a fisherman, about a month before his admission on the 27th of March 1830, had been exposed to cold during convalescence from an attack of acute rheumatism, and had been seized with cough, palpitation, pain of the loins and epigastrium, and much vomiting. These symptoms soon gave place to œdematous swellings of the legs, which had gradually increased, and at the time of his admission occupied the whole of the lower extremities, the scrotum, and the integuments of the abdomen, in which also there was distinct fluctuation. He had slight pain in the left hypochondrium and the lumbar region. His urine was scanty, rather high coloured, 1009 in density, and yielded a copious coagulum on the application of heat. His pulse was rather frequent, and he had much thirst. He was bled on the 28th to the extent of twenty ounces, when the blood was extremely buffy and cupped; and as he still had some pain of side and back, he was again bled to eight ounces on the 31st, when the serum was milky, but the crassamentum was not buffy. At this time the urine, under the use of digitalis, was three pounds in quantity daily, and 1021 in density, and the swelling and distension of the abdomen had increased. On the 7th of April, he was suddenly seized with acute pain, much increased on pressure, extending over the whole abdomen, but chiefly referred to the umbilicus, and stretching down both thighs, with nausea and vomiting, and pain and heat in passing urine. His pulse was 130, and very small. Twenty-eight ounces of very buffy blood were drawn, and thirty leeches applied to the abdomen, with some relief. But his pulse became still more frequent and very weak. Twenty leeches were again applied with some relief; and two grains of calomel and half a grain of opium were given every two hours. But the pain of the back and abdomen, especially towards the lower part, returned with severity, his pulse became scarcely perceptible, and his tongue very dry, though clean. Wine was given at his own request, but without effect, and he died on the 8th, about thirty-six hours after the attack of acute pain. He had no diarrhœa during the whole course of the disease, and generally required the use of laxatives.

Inspection.—The legs and the integuments of the abdomen were very œdematous, and a great quantity of limpid serum was found in the cavity of the abdomen. There were no signs of inflammatory action except on a portion of the jejunum about six inches in length, which was highly injected and red. (It is not mentioned whether this portion of intestine lay in a depending position or not.) The mucous membrane of that portion, as well as in other parts, appeared healthy, but a good deal of serum was infiltrated between the coats of the intestines, so as to give them a remarkably pale colour.

Both kidneys were much enlarged. When deprived of their peritoneal covering, their external surfaces presented a very granular appearance, and a mottled red and gray or yellowish colour. Internally their structure was much altered by the deposition of a whitish or yellow tubercular matter, giving them a completely granular appearance, and nearly obliterating the distinction between the cortical substance and the *tubuli uriniferi*. The state of the liver is not mentioned. There was much serous effusion into both cavities of the pleura, but the lungs were remarkably healthy, and without serous infiltration.

Case XI.—*John Thomson*, aged 47, a servant, was admitted on the 20th of March 1831, labouring under ascites and anasarca. His complaints had commenced about six months previously, with œdema of the ankles after getting his feet wet, and he had been a patient in the Hospital, but only for a few days at that time. Since then the dropsical symptoms had gradually increased, and he was subject to occasional dyspnœa and palpitation, especially on exertion. The operation of paracentesis had been performed with relief before admission. On the 21st, the urine was only one pound in quantity, 1016 in density, and albuminous. Various diuretics were tried with little or no effect. On the 25th, the urine was still less in quantity, 1014 in density, and less coagulable. On the 1st of April, twenty pounds of fluid of a light colour were drawn off by tapping. Soon afterwards he was attacked with severe diarrhœa, which continued unabated till his death, attended by pain of abdomen much increased on pressure, and occasional nausea and vomiting. These symptoms were not relieved by the application of leeches, and the free use of opium. His pulse became very frequent and small, and he died early on the morning of the 3d. No urine was passed naturally during these two days, and a few drops only flowed on the introduction of the catheter.

Inspection.—The body was examined fifty-six hours after death. A good deal of bloody serum was found in the abdomen. There was no appearance of inflammation in any part of the intestines. There was a slight degree of increased vascularity in the mesentery. About an ounce of purulent matter was found in the lower part of the pelvis, between the bladder and rectum. The liver was much altered in structure, though not in size. Externally it was of a mottled gray colour, with some deposition of lymph on its surface. Its internal structure was hard and granular. Both kidneys were very pale externally, extremely soft, and not diminished in size. Internally there was in both an extensive deposition of yellowish granular matter, which had entirely taken the place of the natural fibrous structure of the cortical substance, and encroached greatly on the tubular portions, causing complete obliteration of some of the *tubuli*. The lungs were nearly healthy; the heart was flaccid, but otherwise natural.

I have no hesitation, from the general similarity of the symptoms, in classing the following cases along with those which have been already detailed, although they are all deficient in the material point of examination after death.

Case XII.—*John Baxter*, aged 50, a gas manufacturer, was admitted into the Infirmary on the 2d of November 1829, affected with general anasarca and enlargement of the abdomen of eight months' standing. He made no complaint of pain, but he had dyspnœa in the recumbent posture or on slight exertion, with cough and scanty expectoration. There were no signs of an affection of the heart, and the respiratory murmur was well heard over the whole chest. His urine was scanty and coagulated on the application of heat. Active measures of depletion had been employed before his admission. He was put under the use of digitalis and supertartrate of potass by my colleague, Dr Shortt; and at the time he was transferred to my care, towards the end of November, his urine was pretty copious, and was not affected by heat, and he was free from œdema. But he had still cough, with some affection of his respiration, and he had occasional pain of loins, relieved by blistering. The œdema soon returned, but in a slight degree, and chiefly at night, in the face, hands, and feet; and on the 12th of December, the urine, though still copious, was again highly albuminous. From this time till his death, which took place on the 23d of April 1830, the state of the urine was very frequently examined. Under the continued use of diuretics, it varied in quantity from two to ten pounds and a-half daily, and in density from 1013 to 1018.5, except on one occasion shortly before his death, when it appeared to be above 1025, the quantity being four pounds. The density always diminished as the quantity of urine increased. It continued always more or less, and generally strongly, coagulable. On the 19th of December, he had a good deal of nausea and vomiting, which recurred repeatedly from this time, but he had no diarrhœa. His pulse was full and sharp, though not then frequent. He was bled to twelve ounces, and again, on the 21st, to fifteen. On both occasions the blood was buffy, and on the first, cupped. The serum was slightly milky, 1023 in density on the 19th, and 1018.5 on the 21st. Ten ounces of blood were also drawn by cupping from the loins. Under this treatment the general œdema and swelling of abdomen again disappeared for some time; but about the middle of February they again reappeared, with more dyspnœa, especially at night and on lying down. He was again bled, and took antispasmodics without relief. The urine became more scanty, and though his pulse continued natural in frequency, he became very drowsy and died comatose. I regretted very much that the friends would not give their consent to an examination of the body in this case.

Case XIII.—*Richard Pincott*, aged 34, a coachman, addicted to the use of ardent spirits, was admitted into the Infirmary on the 10th of September 1830, on account of diarrhœa of a fortnight's standing, and was dismissed free from complaint on the 6th of October. He was subsequently re-admitted on the 27th of the same month, affected with ascites and anasarca of the legs, thighs, scrotum, hands, and face, which had commenced in the ankles some time after his dismissal, and gradually extended to the abdomen and face. His urine was scanty, and he had occasional dyspnœa. He stated that he had once before been affected in a similar way. Under the use of diuretics and purgatives, particularly elaterium, the dropsical swelling gradually abated; and when he came under my care, on the 24th of November, the swelling of the abdomen was much diminished, and the œdema was almost entirely confined to the lower extremities. But his urine was scanty, and he had that leucophlegmatic appearance which we have frequently observed to go along with organic alteration of structure in the kidneys. I was immediately led to examine the state of the urine, and found it light-coloured, though still very scanty, 1018 in density, and highly albuminous. It was no longer a case for active treatment, and he was put on the use of diuretics, and mercury was given so as slightly to affect the mouth. Under this treatment the urine gradually increased to three, and afterwards to four, pounds daily, and became more urinous in smell and colour. Its coagulability was frequently tried, and found gradually to diminish. The density; however, always remained low, varying from 1015.5 to 1018. On one occasion, after the removal of the albumen, it was 1014. When dismissed from the Hospital, on the 3d of February 1831, the dropsical swelling had entirely disappeared, and he was free from complaint. His urine, which was upwards of three pounds daily, became only slightly turbid on the application of heat, and its density was 1018.5. I have since learned from the widow of this man, that about two months after he left the Hostal, he was seized, while on his way to London by sea, with his former complaint, severe diarrhœa, and that he died soon after landing, but without any return of his dropsical symptoms.

CASE XIV.—*Joanna Bayne*, aged 52, had been affected for some years with cough, profuse expectoration, occasional dyspnœa and palpitation. She was admittted into the Infirmary, under my care, on the 6th of February 1829, on account of ascites and œdema of the lower extremities. The œdema of the legs commenced about four months, and the swelling of the abdomen about three months before her admission, and she had been tapped about three weeks previously. She had diarrhœa, with occasional nausea and vomiting, and pain of loins, which last she had been subject to for some months. There was no perceptible increased impulse or sound of the heart's action, and the sound of respiration was everywhere heard, with some catarrhal *râles*. Her pulse was rather frequent, soft, and small. Her urine was scanty, and coagulated strongly on the application of heat. Its density was not ascertained. It increased in quantity under the use of digitalis and squill, but it remained strongly coagulable, and the œdema continued and extended, though slightly, to the hands and trunk. She had little cough, but the diarrhœa, with occasional vomiting, continued unchecked by opium.

On the 15th, no urine had been passed since the day before; her pulse had become very weak and frequent; her tongue brown and dry; her teeth encrusted; and her extremities cold. Wine was given but without effect, and she died comatose on the 16th. Permission was not obtained to examine the body.

CASE XV.—*Dorothea Abby*, aged 31, was admitted into the Clinical Ward on the 8th of February 1829, under the care of Dr Graham, and was afterwards transferred to that of Dr Duncan, to whom I am indebted for the case. Her complaints commenced about six weeks previously, after exposure to cold, with pain of the lumbar region, the epigastrium, and the right hypochondrium, which had continued more or less since that time. The œdema of the legs had commenced twelve days before her admission, and had gradually extended to the thighs, with some enlargement of the abdomen. She had some dyspnœa, and slight dry cough. Her pulse was rather frequent, and of moderate strength. She had much thirst, and her urine was scanty. The pain at the epigastrium was relieved by cupping, and the urine became more copious under the use of cream of tartar and digitalis. But the dropsical symptoms continued without material diminution, and fluctuation became distinct in the abdomen. The urine, though copious, was found on several occasions to be coagulable. Its density was not ascertained. Shortly after her admission she began to suffer from frequent nausea and vomiting; and she complained much of pain of the loins and abdomen, and latterly of general pains. Towards the end of March, the nausea and vomiting abated, and were succeeded by diarrhœa, which soon became constant and untractable, and caused great debility and exhaustion. On the 30th of April, she complained of severe pain of the loins and abdomen, which was somewhat relieved by sinapisms. The diarrhœa continued, and her voice was very weak. On the 2d of May, she was in great distress from pain of the loins and abdomen. Her urine had become more scanty; her respiration was accelerated and noisy, with cough, and her pulse was very frequent and feeble. The diarrhœa continued urgent, and she died next day. I believe that in this case permission was not obtained to examine the body, as no account of the dissection is inserted in the journal.

II. *Fatal Cases in which, along with Dropsy and Coagulable Urine, the most prominent symptoms were those connected with the organs of Respiration and Circulation.*

CASE XVI.—*Janet Waters*, aged 22, was admitted into the Infirmary on the 24th of December 1829, and came under my care two days afterwards, on account of great swelling of the abdomen, with distinct sense of fluctuation, and slight œdema of the face. There was considerable dyspnœa, with cough and mucous expectoration, and her pulse was rather frequent. The swelling of the abdomen had commenced about a fortnight before her admission. The catamenia had been irregular for three months; and she attributed her complaints to exposure to cold and wet. The urine was about two pounds daily, and albuminous. Its density was not ascertained. She had been bled to twenty ounces, and had taken calomel and opium; and when I first saw her, the gums were already affected, and she had mercurial fœtor. She was again twice bled, with temporary relief to the dyspnœa, and the blood was buffy and cupped, and the serum milky. The urine became somewhat more copious and light-coloured under the use of cream of tartar and jalap; but the dropsical symptoms continued, and the œdema extended to the hands. There was no diarrhœa. The dyspnœa and cough became more urgent, especially at night; and her breathing hurried and noisy, but without pain. The catarrhal *râles* were heard over both sides of the chest. She had some subsultus tendinum, and her pulse became more frequent, small, and weak. The mercurial fœtor continued, although the calomel and opium had only been given for two days; and the mouth and lips were much swollen and painful, with salivation. Wine was given without effect, and she died on the 30th of December.

Inspection.—The lining membrane of the bronchiæ was more vascular than natural, and was loaded with much muco-puriform matter. Both lungs, and especially the right, were infiltrated with bloody serum. The posterior part of the right lung was condensed, and rather friable. There was no tubercular deposition in any part of the lungs. A considerable quantity of serum was found in the right cavity of the chest, and a very little in the left. There was about six ounces of serum in the pericardium. The heart was natural.

There was very little serum in the abdomen. The liver was slightly mottled, but not otherwise diseased. Both kidneys were much diminished in size, not being above a third or a fourth of their natural size. The external surface of both presented a very rough tuberculated appearance, and mottled colour. The cortical substance of both was entirely obliterated, and its place occupied by a yellowish granular matter of tubercular appearance. The tubular portions, though much compressed and encroached upon by this granular deposit, did not appear to be much diseased.

I am led to believe, from the very advanced stage of the disease which the kidneys presented in this case, that the patient had not given a correct account of the history of her complaints, and that they were probably of much longer standing than she stated at the time of her admission.

Case XVII.—*Mary Allison*, aged 65, was admitted into the Infirmary under my care, on the 18th of April 1829, with ascites and œdema of the legs; and she had been in the Hospital with a similar affection about two years before. The swelling of the abdomen and the œdema had commenced after exposure to cold about three weeks before admission.. She had occasional pain of the loins and abdomen, but no diarrhœa. Her urine was scanty, and became turbid with a flocculent precipitate on the application of heat. Its density was not ascertained. She had much thirst, dry tongue, and her pulse was rather frequent and sharp. She was bled on the 19th to twelve ounces with relief; the blood was buffy, and the serum milky. She was again bled to the same amount on the 30th, and had several applications of leeches on account of pain without tenderness of the abdomen. The urine was never materially increased under the use of digitalis and squill, and remained always coagulable. The œdema, although occasionally diminished, gradually extended to the hands, the face, and the trunk, and was at one time accompanied with erythematic redness. On the 4th of May, her respiration became hurried and somewhat noisy, with cough and pretty copious puriform expectoration. The catarrhal *râles* were heard over both sides of chest, and the sound of respiration was faint. She complained of general pain; that of loins and abdomen continued occasionally. The dyspnœa became more urgent, amounting at times to orthopnœa. She became drowsy, with much moaning and some muttering delirium. Her pulse became very frequent and small, with diminished expectoration and lividity of lips, and she died comatose on the 16th of May.

Inspection.—There was a small quantity of serous effusion in the cavity of the abdomen. The liver was mottled in colour, and somewhat granular in structure; but not otherwise diseased. Both kidneys were diseased. Externally they were smooth, and of a light fawn colour, with here and there some appearance of vascularity. The cortical substance in both was entirely altered in structure, and presented the appearance of granulated tubercular matter. The tubular portions were similarly altered in most places. In the right kidney, which was considerably diminished in size, the cortical substance appeared to have been completely removed by absorption. The *tubuli uriniferi* extended to the circumference, and were merely covered by the investing membrane of the kidney. Permission was not obtained to examine the other cavities.

Case XVIII.—*Nancy Burns*, aged 25, of very intemperate habits and leucophlegmatic appearance, was admitted into the Infirmary, under my care, on the 28th of January 1829, labouring under enlargement of the abdomen, with obscure sense of fluctuation, and œdema of the legs of four months', and amenorrhœa of ten months' standing. She had pain referred to the lower part of the sternum, especially on coughing, and had been subject to palpitation for about a month. There was at this time no increased impulse or sound of the heart's action. Her breathing was frequent, but with little cough, and the sound of respiration was everywhere heard. She had been bled several times with relief. On the 21st, her pulse was 120, and sharp; the pain of chest and frequent breathing continued, and she complained of general rheumatic pains. She was bled to sixteen ounces, and again on the 22d to the same amount, with immediate relief. The blood was buffy, and the serum milky on both occasions. The urine was now found to be copious, light-coloured, and albuminous, becoming turbid on the application of heat. Under the use of supertartrate of potass and purgatives, the swelling of the abdomen and the œdema of the legs gradually diminished. Her pulse became nearly natural, and she had no return of pain. The urine continued copious and light-coloured, but still coagulable. Its density was not then ascertained. When dismissed, at her own desire, on the 3d of February, there was still slight œdema, but the swelling of the abdomen was gone.

This woman again came under my care on the 16th of October 1829. She had, since her former dismissal, been again in the Hospital, under the care of Dr Christison, on account of a recurrence of her dropsical complaints, and had been dismissed relieved about two months previously. Her urine at that time, when about the natural standard in quantity, and almost quite colourless, Dr Christison found to be only 1006.9 in density, and to contain not above a fifth of the usual proportion of urea. She had now very slight œdema of the legs, and there was no enlargement of the abdomen. But her breathing was frequent and noisy, with occasional hard cough, difficult and scanty mucous expectoration, and pain referred to the lower part of the chest and the epigastrium. The signs of extensive catarrh existed on both sides of the chest, and the sound on percussion was dull, and the sound of respiration very faint on both sides posteriorly. She was bled without relief. Her pulse became small, weak, and frequent, and her tongue dry. The dyspnœa continued urgent, and she died on the second day after her admission. She had no vomiting or diarrhœa. Her urine was very scanty, a little obtained the day before her death was of nearly natural colour, 1010.5 in density, and strongly coagulable.

Inspection.—There was a considerable quantity of turbid serum in both sides of the chest, and over both lungs there was a thin layer of recent lymph, with some adhesions to the costal pleura. The bronchiæ of both lungs were loaded with mucus, and the lining membrane was vascular. There was much serous infiltration in both lungs. There was hypertrophy of the walls of the left ventricle without dilatation. The base of the aortic valves was somewhat cartilaginous, but they were otherwise natural. The natural structure of both kidneys was much altered by the deposition of yellowish granular matter, occupying the place of the cortical substance, and encroaching upon the *tubuli*, as in the cases already detailed, and they contained numerous serous cysts. The state of the liver is not mentioned in the account of the inspection, but, if at all affected, it certainly was only to a very small extent, and it was not felt to be enlarged during life.

Case XIX.—*John Hogg*, aged 59. The details of this man's case, in reference to the peculiar affection of the lungs under which he laboured, will be found in another part of this Number. It is only necessary to state here, that the œdema of the legs had commenced a few days before his admission, and gradually spread to the thighs, scrotum, abdomen, and arms. The urine was never above, and generally below, the natural standard in quantity, varying in density from 1014 to 1020, and always albuminous. He never complained of pain of the loins, and had no vomiting or diarrhœa.

Inspection.—Besides the disease of the lungs and heart, both kidneys were of a mottled colour, and lobulated externally, but not diminished in size. Internally they presented the pale granular appearance, already so frequently described, which had encroached considerably on the *tubuli*. The liver was somewhat granular and friable.

For the two following cases, I am indebted to Dr Graham, under whose care they occurred in the Clinical Wards.

Case XX.—*William Limery*, aged 56, an old soldier, was admitted on the 11th of November 1830, labouring under ascites and œdema of the legs of eighteen months' standing. He had been affected in a similar way four years previously. He had cough with copious puriform expectoration, and occasional pain in the lower part of the chest. Over the lower third of the right side the sound on percussion was dull, and the sound of respiration nearly inaudible. He had little or no dyspnœa. The urine was scanty and coagulable. Its density was not ascertained. He was twice bled to a moderate extent, and cupped on the sides with relief, and under the use of diuretics, the urine at first became copious. He had some vomiting, but apparently produced by tartar emetic given with a view to keep up nausea. He had no diarrhœa, and never complained of pain of the loins, but he became emaciated and weak; his urine became scanty; his pulse frequent and feeble; his expectoration more difficult; his respiration hurried; his face slightly livid; and his pupils contracted. He died comatose on the 27th of November.

Inspection.—The lungs were emphysematous with very large bullæ on their surface. The lower lobe of the right lung was condensed, and infiltrated with serum. The mucous membrane of the bronchiæ was vascular. There was no serous effusion into the cavities of the chest or abdomen. The liver was small, somewhat lobulated on its surface, and adhered partially to the diaphragm. It was firm and light-coloured throughout its substance. Both kidneys were soft, and externally of a lighter colour than natural, and mottled with tortuous yellow streaks. Internally there was an interstitial deposit of whitish granular matter, taking the place in a great measure of the natural fibrous structure of the cortical substance, and invading the tubular portion, to which it had given an irregular appearance.

CASE XXI.—*Susan Grant*, aged 26, was admitted on the 13th of October 1828, labouring under anasarca and slight ascites, with dyspnœa, at times amounting to orthopnœa, occasional palpitation and starting from sleep, and much cough, with copious yellow puriform expectoration. Her complaints had commenced about a fortnight previously with febrile symptoms, succeeded by the œdema, which had since gradually increased. She had not previously been subject to pectoral complaints, but she had been a patient in the Fever Ward six months before her admission, and three years before she had been cupped and blistered on the loins for pains thought to be rheumatic. She had diarrhœa of eight days standing, and occasional vomiting. Her pulse was very frequent, she sweated profusely, and had much thirst. The urine, at first copious, soon became scanty; it was 1010 in density, and highly albuminous. Under the use of diuretics it again became copious, and continued so till the last. The coagulability disappeared for a time during the earlier period of the disease, but afterwards recurred. The dropsical swellings also abated materially, and at one time had entirely disappeared, but afterwards returned, and extended to the face. She was frequently bled, with temporary relief to the cough and dyspnœa; but in the beginning of November the signs of tubercular disorganization were detected in both lungs, and particularly in the summit of the left. She did not complain of palpitation, and there was no increased impulse or sound of the heart's action. When she came under the care of Dr Graham in the beginning of February, she was in an advanced stage of phthisis, with copious puriform expectoration, diarrhœa, and œdema of the legs, hands, and face. On the 24th, she was seized with acute pain under the left mamma, and great increase of the dyspnœa; and she died on the 26th.

Inspection.—There was empyema and pneumothorax of the left side, evidently of recent formation. The lung of that side was collapsed, condensed, and did not crepitate. There was extensive tubercular deposition throughout its substance, and in its upper lobe there was a large cavity which communicated by means of a fistulous opening with the sac of the pleura. Tubercles in various stages of their progress occupied the substance of the right lung, particularly in its upper lobe. The liver had a mottled yellowish brown colour, both externally and internally, (a very common appearance in cases of phthisis) and was somewhat firmer than natural. Both kidneys were slightly granular externally, and of a pale yellow colour streaked with red. Internally they were of a similar pale yellow colour and granular texture; the fibrous structure only remaining in a few isolated spots.

I am indebted to Dr Christison for the following case:—

CASE XXII.—*Elizabeth Brown*, aged 34, was admitted into the Infirmary at the end of September 1829, with severe pulmonary complaints, to which she had been long liable. She had considerable dyspnœa, pain under the sternum, frequent hard cough, and copious tenacious expectoration. A few days before admission, her legs had begun to swell for the first time, and they were much distended when she entered the Hospital. The urine was about four pounds daily; it varied at first in density from 1013.5 to 1018.5, and gave a copious flaky precipitate when heated. The urgency of her symptoms was at first diminished by withdrawing small quantities of blood; and at the same time the œdema rapidly decreased, and became at length inconsiderable. But the cough and dyspnœa continued more or less, the expectoration became muco-purulent, soreness of the throat and tenderness of the larynx were added to her complaints, and on the 22d October cavernous râle, and cavernous respiration were heard under the left clavicle. About a week later diarrhœa appeared, and continued with occasional intervals till her death. The abdomen was at times tender and generally tympanitic, and there was also occasional vomiting; but there was no particular pain in the loins, or difficulty in making water. The urine was at one time as high as ninety-six ounces daily, under the operation of digitalis; and it was about this period that the œdema disappeared; but afterwards it was pretty steadily sixty-four ounces daily, and at the middle of November, when at this standard in quantity, its density was found to have fallen to 1009.5. It was always very coagulable. The hoarseness, expectoration, and diarrhœa increased towards death, which occurred on the 20th December; but the œdema had been at this time absent for some weeks. After the first two or three weeks, the remedies used were chiefly directed to palliate the phthisical symptoms, and therefore need not be here dwelt on.

The account of the dissection in this case has been mislaid, but cavities were found in the lungs, ulceration in the intestines, and I think also ulceration in the larynx. The state of the kidneys I am able to describe, in consequence of a drawing of the appearances having been preserved. They were both much diminished in size, but smooth, and of a pale brown colour externally. Internally the cortical substance was of a pale lemon yellow colour. Its fibrous structure was scarcely perceptible, in consequence of the deposition of minutely granular matter of tubercular appearance. Some of the *tubuli* also had been completely obliterated; and those which remained had been much invaded by this deposition. These were of a pink colour, and contrasted strongly with the pale yellow of the cortical substance. The liver was of a mottled yellow and red colour, and granulated.

The two following cases were latterly under the care of Dr Duncan, to whom I am indebted for permission to make use of them.

Case XXIII.—*Mary Dunlop*, aged 23, was admitted into the Clinical Ward on the 27th of January 1831, in an advanced stage of well-marked pleuro-peripneumony of the left side, with ascites and œdema of the legs and arms. She had dyspnœa, frequently amounting to orthopnœa, cough, with little expectoration, and lividity of the lips. Her complaints had commenced nine weeks previously in the Lying-in-Hospital, two days after delivery, with rigors, after exposure to cold, followed by acute pain of the left side of the chest, and cough, which abated under active measures of depletion. The dropsical swellings had commenced about a month before her admission, after fresh exposure to cold and wet, and had since gradually increased. The pulse was frequent, small, and feeble, the surface rather cold, and the tongue dry. She had no vomiting or diarrhœa. Her urine was scanty and turbid, becoming clear on the first application of heat, and afterwards yielding a copious coagulum. Its density was not ascertained. It increased somewhat under diuretics on the 29th, but was still coagulable. The breathing became more difficult, with much debility; she became drowsy and delirious, and died comatose on the 31st. She stated that she had been in good health previously to her delivery, and never had any pectoral complaints.

Inspection.—There was serous effusion in both sides of the chest, but particularly in the left, and the lung of this side was considerably diminished in volume and condensed, and adhered firmly to the pleura costalis. The right lung did not adhere to the pleura, but its lower and posterior portions were condensed and somewhat friable, and anteriorly it was infiltrated with serum. The heart was flaccid, and the valves healthy.

There was considerable serous effusion in the cavity of the abdomen. The liver was large and pale in colour; its substance was soft and granular. There was a minute granular deposition over the whole of the peritoneal surface, especially on that of the diaphragm. The mesenteric glands were enlarged. Both kidneys were large and flabby, and the fibrous structure of the whole of the cortical substance, and of part of the tubular portions, was obliterated by the deposition of a pale yellow granular matter.

CASE XXIV.—Widow Dudgeon, aged 36, was admitted into the Clinical Ward under the care of Dr Graham, on the 28th of November 1829. This was a very protracted case. She was transferred to the care of Dr Duncan on the 30th of January 1830, and she died on the 28th of April. She had been under the care of Dr Alison during a former attack, when her urine was coagulable, but at that time had recovered her health. Her illness commenced five weeks before her admission, with rigors, shortly after swallowing a copious draught of cold water when fatigued and in a state of profuse perspiration, followed by frequent hard cough and œdema of the legs, which gradually extended to the hands, the chest, and the face, and latterly to the abdomen, in which, soon after her admission, there was distinct fluctuation. She had dyspnœa, sometimes very urgent, with frequent cough, and difficult mucous expectoration. She had occasional pain of the abdomen and loins; her urine was very scanty, but light coloured and highly albuminous. It was frequently tried during the whole course of the disease, and was always found coagulable. On one occasion, while scanty, its density was found to be 1016. It was never much increased in quantity even by the continued use of diuretics; and the dropsical swellings never entirely disappeared, although they were much diminished on several occasions. She was frequently bled, and cupped on the loins and abdomen, with temporary relief; she took a variety of medicines, and particularly elaterium for some time, which acted powerfully, but with no marked good effect. She had occasionally a good deal of vomiting and diarrhœa, which seemed to a certain degree to alternate with paroxysms of coughing and dyspnœa. There were no signs of an affection of the heart. Latterly she became very weak, with a good deal of singultus and vomiting. She had frequent fainting fits, in one of which she died.

Inspection.—The account of the dissection in this case has been unfortunately mislaid; but I am enabled to state from Dr Duncan's recollection of the appearances, confirmed by other gentlemen who were present, that there was much serous infiltration of the cellular tissue of the body, and considerable serous effusion in the cavities of the thorax and abdomen. The liver was mottled and granular, with apparently much hypertrophy of the gray matter. The kidneys were much enlarged, pale, and granular, and, as Dr Duncan informs me, exhibited a very well-marked instance of the disease described by Dr Bright.

III. *Fatal Cases in which there was no Dropsy, including those in which the Urine had not been examined during life, and the Disease of the Kidneys was only detected after death.*

The following important case has been kindly communicated to me by Dr Christison.

Case XXV.—*Robert Johnston*, aged 56, applied for admission in October 1830, chiefly on account of catarrhal symptoms. But, on further examination, it was found that for four years he had laboured under feebleness of the right leg, and for ten months under numbness and coldness. But, more particularly, he had been affected for three weeks with frequent and painful micturition, indigestion, and a feeling of distension, fulness, and tenderness of the belly. He was compelled to make water once every hour. No stone or stricture could be discovered; but the urine was found to be about twice the natural quantity, of the specific gravity 1011, and slightly coagulable. In the beginning of November the urine was forty-eight ounces daily, 1010 in density, very pale, and much more coagulable. He had become much emaciated; and had received no relief from cupping of the loins, blisters, and diuretics, and merely temporary ease from opium. In the second week of the same month he began to suffer from frequent vomiting, and soon afterwards he discharged all his food and drink for days together. He had likewise a great tendency to diarrhœa; and the belly was distended, tender, and tympanitic. In the third week of the same month, after the use of digitalis, the urine was increased for a time to eight pounds daily; but the only effect was, that his micturition became more frequent. At the end of the month there was added, for eight or ten days, a considerable discharge of ropy mucus with the urine, which greatly increased the dysuria. The urine at this period was about 100 ounces daily, faintly coagulable, and 1010.5 in density. In the beginning of January a caustic issue was applied to the loins, but no relief was procured. In the beginning of February the vomiting, which had been for several weeks inconsiderable, began to recur much more frequently. The urine continued abundant, of the same density, but again very coagulable. The diarrhœa and tympanitis still recurred at intervals. He died at the end of the same month without any particular change in the symptoms, except that for nine days before death he passed on an average only one ounce of urine daily, and sometimes none for thirty-six hours. The vomiting for the last three weeks was very frequent, every kind of food and drink was immediately discharged, and no relief whatever was obtained from a variety of medicines given with the view of checking it. He died exhaused and emaciated to a mere skeleton; and to the last was alive to all his sufferings. Within an hour of his death he recognized me, and complained of the torture occasioned by the vomiting. He had laboured under no dropsical affection for at least five years. About that time he said his legs were swelled; but from his describing them as red and tender, and as having subsequently desquamated, it is doubtful whether the affection was not erysipelas.

Inspection.—A little clear serum was found in the abdomen. The liver was healthy. Both kidneys were much diseased. A granular, yellowish matter had taken the place of the whole cortical substance; and a considerable part of the tubular structure was encroached on by the same deposition. This was particularly the case in the right kidney, one-half of which presented internally no appearance of tubular structure at all. Externally both kidneys were rough, and rather less than the natural size. The bladder was much contracted, in a few spots reddish on its internal surface, but otherwise natural. The lungs, the heart, and the stomach were healthy.

This was one of the first cases, Dr Christison observes, where our attention was particularly called to the disease of the kidney as existing without dropsy. It is a very remarkable example of the most acute suffering from a complication of urinary symptoms, apparently connected with no other disease in the urinary organs, except that particular organic change in the structure of the kidneys. I have not specified the particular remedies employed, because none of them were of the slightest use. At first leeches and blisters appeared to procure some relief. But afterwards various diuretics, mercury, laxatives, opium, and various other antispasmodics, alkalis, *uva ursi*, &c. were fairly tried without the slightest alleviation. It was also a striking feature in the case, that the vomiting when once fairly established was, as in other instances where it depends on disease of the kidney, unmitigated by any treatment which could be thought of. The manner of death is peculiar. The absence of coma, notwithstanding almost total suppression of urine for nine days, is a very unusual circumstance.

Case XXVI.—*Susan Warrender*, aged 39, was admitted under my care, on the 28th of April 1831, in an advanced stage of phthisis pulmonalis. The signs of tubercular disorganization and cavities were heard on both sides of the chest, but particularly on the right. She had amenorrhœa of two years' standing, and stated that her pectoral complaints had commenced about three years previously, immediately after the healing up of an old sore on her knee. Her urine was found to be slightly albuminous, and although rather scanty, its density was only 1008.5 on one occasion, and, on another, only 1006.5. She had obstinate diarrhœa for a week before her death, which took place on the 12th of May. She stated, that she had never been affected with dropsy, and she had no dropsical symptoms during her residence in the Hospital.

Inspection.—The right lung was much reduced in size, very dense, studded with tubercular deposition, and contained large irregular cavities. The upper part of the left lung was also tubercular, and contained several small cavities. The liver was considerably enlarged, of a mottled yellow and red colour, and granular in its texture. Both kidneys, and especially the right, were unusually pale, and somewhat mottled in colour externally. The cortical substance of both exhibited a similar very pale colour. Its fibrous structure was in some points obliterated, and it had encroached on the tubular portions, which were otherwise healthy.

Case XXVII.—*May Ferrier*, aged 30, was admitted under my care, on the 3d of May 1831, labouring under well-marked symptoms of phthisis of six months' duration. In the course of a short time the signs of tubercular excavations were distinctly heard, first in the upper part of the right, and afterwards of the left, lung. From her leucophlegmatic appearance I was led to examine her urine. It was passed in pretty natural quantity, and was at first high coloured and turbid. Its density at that time was 1024, and after filtration it yielded numerous flocculi on the application of heat. On a subsequent occasion, when clear, its density was only 1014, and it was still strongly coagulable. She had latterly troublesome diarrhœa, but never had any dropsy. She died on the 26th of June.

Inspection.—The right lung contained large cavities, with much tubercular deposition in various stages. Several smaller cavities were found in the left lung. The liver was enlarged and somewhat mottled in appearance. There were a few minute tubercles, but without ulceration, in the lower part of the ileum, where the mucous membrane was somewhat vascular. Both kidneys were diseased; but in this case the alteration in structure was most marked in the left. It was lobulated, and very much mottled externally. The cortical substance was very pale and granular, and had encroached considerably on the tubular portion, some part of which was obliterated. The right kidney was similarly affected, but to a less extent.

Case XXVIII.—*Magnus Adamson*, aged 60, a cooper, of rather intemperate habits, was seized, eight days before his admission under my care, on the 9th of May 1831, and after exposure to contagion, with the usual symptoms of continued fever. Soon after his admission the symptoms became typhoid, with frequent, small, and soft pulse, hurried breathing, dry tongue, cold extremities, and contracted pupils. He did not rally under the free use of stimulants, and died on the 18th of May. The urine passed on that day was of natural colour, and rather scanty. It was only 1010 in density, and yielded a distinct coagulum on the application of heat. He had no dropsy.

Inspection.—There was considerable effusion on the surface of the brain under the arachnoid membrane, and also at the base, but the substance of the brain was natural. The ventricles contained rather more serum than usual. The lungs, the heart, and the liver, were apparently healthy. There was slight vascularity, but no ulceration of the mucous membrane at the lower part of the ileum. Both kidneys, and especially the right, were mottled in colour externally. Internally the cortical substance was paler than natural, and presented a granular aspect, but the tubular portions were little, if at all, altered.

Case XXIX.—*Alexander Bain*, aged 22, a copper-plate printer, of intemperate habits, had been a patient in the Clinical Ward, affected with acute bronchitis or pneumonia, along with symptoms resembling those of delirium tremens, and had been seized with rigors and the other symptoms of continued fever, on the day of his dismissal from the Infirmary, ten days before his re-admission under my care, on the 23d of March 1831. At that time he was in an advanced stage of fever with typhoid symptoms and petechiæ; very frequent, small, and weak pulse; hurried breathing; some cough without expectoration; tongue dry, black, and protruded with difficulty; pupils at first dilated, afterwards contracted; and some incoherence, with much subsultus tendinum and picking of the bed clothes. He had general tenderness of the body, and particularly of the abdomen, but he had no dropsy. On the 26th, his urine was rather scanty, 1015 in density, and highly albuminous. It was again tried on the 28th, when it was in pretty good quantity. Its density was then 1022, and it did not coagulate. The pulse became imperceptible, and the extremities cold, notwithstanding the free use of stimulants, to which he was habituated, and he died on the 29th.

Inspection.—The blood-vessels on the surface of the brain were somewhat turgid, and there was some serous effusion beneath the arachnoid, giving this membrane a milky appearance. The lateral ventricles contained somewhat more serum than usual, but the substance of the brain and cerebellum was natural. There was slight œdema of the lungs, with considerable congestion of blood in the most depending portions, but the pulmonary substance was nowhere condensed. There was a good deal of mucus in the bronchiæ, and the lining membrane was red and somewhat thickened. The heart, the liver, and the spleen were healthy. The blood was everywhere quite fluid.

The kidneys were of a remarkably long, contorted, and lobulated form, and were of a darker colour than natural, apparently from congestion of blood. But the fibrous and radiated structure of the cortical and tubular portions was quite distinct in both. The calices and pelves of both kidneys were much enlarged, and their lining membrane was highly injected with red vessels, and nearly covered with patches of ecchymosis, giving it an appearance similar to that of purpura. One of the pelves contained some fluid of the colour and smell of urine, and somewhat turbid from flocculi of lymph floating in it. When freed from these by filtration, and exposed to heat, this fluid was distinctly and strongly coagulable. The bladder was contracted, and contained no urine. An appearance somewhat similar to that in the lining membrane of the pelves of the kidneys was observed in the most depending portions of the small intestines, the mucous membrane of which was vascular, but without ulceration, and beneath it were found various patches of ecchymosis.

This I am inclined to consider an important case in one respect, as, when taken along with Dr Bright's case already mentioned, it seems to prove that an albuminous state of the urine may exist without appreciable organic disease of the secreting substance of the kidneys, and merely in connection with congestion of blood, perhaps not amounting to inflammation, in these organs; and this would appear to take place in those cases more particularly, in which the blood remains fluid after death. The appearance of albumen in the urine in this and similar cases may, perhaps, be explained by the fact, that transudation of the serum takes place more readily when there is a tendency to fluidity of the blood; and the low specific gravity of the urine may be connected with the general derangement of the functions. But such cases differ much from those in which, without fever, the urine continues coagulable throughout the course of a chronic disease with the symptoms already detailed. This congestion, however, as formerly mentioned, may be a first step in the process of organic alteration of structure in many cases, and especially in those in which the urine has been at first bloody.

In the nine following cases, the state of the urine was not ascertained during life, but it was found to be coagulable after death. I was at first disposed to place considerable reliance on this criterion, having found it to exist in every case of disease of the kidney in which it was tried; and having observed, in some cases where there was no apparent disease of the kidney, that the urine obtained from the bladder did not coagulate. But more lately I have met with a case, that of a woman who died in consequence of a penetrating wound of the chest, in which, although I at first thought, from the mottled appearance of the kidneys externally, that they were diseased, I could not detect any distinct alteration of their natural structure internally; and the urine obtained after death became turbid on the application of heat. This, however, I do not consider as a satisfactory case; and I am still uncertain what degree of reliance ought to be placed on this test. It appears, however, from the experiments of Dr Wells in the paper already mentioned, that serum added in the minute proportion of a drop to the ounce of healthy urine, or in the proportion of one to 640, yields a distinct coagulum on the application of heat; and some experiments which I have lately made on this point would seem amply to confirm those of Dr Wells. I am inclined to think, therefore, that when the transudation of so small a quantity of serum through the coats of the bladder or the blood-vessels, (and there is little doubt that this may take place,) either immediately before or after death, can cause distinct coagulability of the urine, this criterion must be exposed, in many cases at least, to considerable fallacy. But further observations are required before this point can be satisfactorily determined; and unfortunately it frequently happens in the cases best suited for the purpose that no urine can be obtained after death.

Case XXX.—*Fanny Wilson*, aged 61, a woman of intemperate habits and leucophlegmatic appearance, who had been under the care of Dr Alison three weeks previously, when she was affected with delirium tremens, was re-admitted under my care, on the 3d of February 1831, on account of chronic bronchitis of several months' standing. She stated, that during her former residence in the Hospital she had slight œdema of the legs; but she had no dropsy during the time she was under my care. Her pectoral complaints were slight; but she was seized with diarrhœa three days after her admission, which continued for some time, and was followed by great drowsiness and debility, and she died comatose on the 7th of March. The action of the heart was occasionally irregular, but there were no signs of disease of that organ or of the liver. The urine was not examined, and was not ascertained to be scanty.

Inspection.—There was slight effusion under the arachnoid membrane, and also in the ventricles of the brain. Its substance was of natural firmness, and when cut, showed fewer red points than usual. There was no turgescence of the blood-vessels. The bronchiæ contained much mucus, but the lungs were otherwise natural. The heart was healthy. The right kidney was much diminished in size, and of a pale-yellow colour internally as well as externally. No distinction could be traced between the cortical and tubular portions, and the whole substance had assumed a completely granular appearance. A similar alteration of structure, but to a less extent, was found in the left kidney. The other abdominal viscera appeared healthy. A small quantity of urine obtained from the bladder coagulated strongly on the application of heat.

Case XXXI.—*Elizabeth Dunn*, aged 31, was admitted under my care on the 17th of April 1830, labouring under the symptoms of confirmed phthisis, and died on the 22d. She had no dropsy, and the state of her urine was not ascertained.

Inspection.—There was considerable effusion of serum in the cavity of the chest. The lungs were much disorganized by tubercular deposition, and contained several excavations. The kidneys were larger and softer than natural, and their fibrous structure had in some measure disappeared, and given place to a granular deposition. The urine found in the bladder yielded a flaky precipitate on the application of heat.

Case XXXII.—*Euphemia Burns*, aged 90, was admitted under my care, on the 1st of April 1831, labouring under catarrhus senilis of considerable standing, and constipation of the bowels. She could not give any distinct account of the history of her complaints; and she appeared to be dying without any well-marked disease. There was some strong action of the heart, and the pulse was irregular in strength and frequency. The signs of chronic catarrh were heard on both sides of the chest. She had no dropsy, and her breathing only became affected on the day before her death, which took place with preceding coma on the 6th.

Inspection.—There was slight serous effusion in the ventricles, but no disease of the substance of the brain. There was some serous effusion in the right side of the chest, and both lungs were somewhat œdematous posteriorly, but otherwise were little diseased in structure. The whole mucous membrane of both lungs was red, and loaded with puriform mucus. There was slight thickening of the aortic valves, and some hypertrophy of the left ventricle. There was some bony deposition beneath the inner membrane, but without ulceration, of the thoracic and abdominal aorta and its principal branches. A somewhat similar appearance existed in the coats of the basilar artery. The right kidney was diminished in size, and contained several serous cysts, one of them as large as a pigeon's egg, attached to its surface, or developed in its substance. The cortical substance was not above an eighth of an inch in depth, and was granular in its structure. The tubular portion was also slightly granular in some places; in others apparently healthy. The left kidney showed the granular appearance in some points, both of the cortical and tubular portions, but was less diseased. A little turbid urine was obtained from the bladder, which after filtration coagulated abundantly on the application of heat.

Case XXXIII.—*Moses Baird*, aged 40, was seized with rigors and the other symptoms of continued fever, after exposure to contagion, and seven days before he was admitted under my care, on the 14th of May 1831. He had frequent small pulse, dry tongue, contracted pupils and delirium. He died on the 24th.

Inspection.—There was considerable vascularity of the pia mater, with some serous effusion beneath the arachnoid membrane. There was but little effusion in the ventricles. The left lung was healthy. There was some dark-coloured effusion in the right side of the chest, which seemed to be connected with an appearance of ulceration and perforation of the œsophagus near the cardia. The lung of that side was denuded of its pleura, was of a dark-brown colour, interspersed with brighter red patches, and was somewhat condensed. The agglomerated glands at the termination of the ileum were much enlarged, and had a dark punctulated appearance, but there was no ulceration. The left kidney presented a mottled appearance externally; and internally it was distinctly granular in structure, the tubular portions being in some places nearly obliterated. The right kidney was also slightly diseased in the same manner. A small quantity of urine obtained from the bladder coagulated strongly after filtration.

Case XXXIV.—*James Bell*, aged 45, was admitted into the Surgical Wards on the 7th of March, on account of great hæmorrhage, caused by an incision made into an unhealthy sore on his back. I was requested to see him on the 15th, and found a tumour, evidently caused by enlargement of the liver, occupying the right hypochondrium, and extending nearly to the crest of the ileum. He had a cachectic look, and stated that he had been in bad health for several years. He had no dropsy when I saw him, but I afterwards understood from his friends that he had some years previously an attack of swelling of the legs and face. On the 17th he became drowsy, with hurried breathing, dry tongue, and nearly imperceptible pulse. He had passed no urine during the preceding twenty-four hours. The catheter was introduced, but scarcely any urine flowed. He became comatose, and died on the 18th.

Inspection.—The liver was enormously enlarged, of a mottled yellow colour, very dense, and friable. The spleen was also much enlarged. Both kidneys were somewhat enlarged and soft, and presented externally the same mottled colour as the liver. Internally, the fibrous structure of the cortical substance of both had given place to the deposition of the yellow granular matter so often described, and the *tubuli* had been invaded by it to a considerable extent. A very small quantity of turbid urine obtained from the bladder, was found strongly coagulable after filtration. There was some serous effusion into the cavity of the chest, but the lungs, the heart, and the great vessels, were healthy.

Case XXXV.—*Jane Drummond*, aged 68, was admitted under the care of Dr Alison on the 12th of April 1831, in a state of great debility, with hurried and difficult breathing, and cough without expectoration. She was unable to give a distinct account of the history of her complaints, but it appeared that she had been subject to pectoral complaints for some years, and that they had lately become much aggravated. The signs of extensive bronchitis were heard over both sides of the chest; she had no dropsy, and the urine was said to be passed in pretty good quantity. She became very drowsy, with delirium, and died on the 21st.

Inspection.—The lungs anteriorly were emphysematous, and posteriorly of a dark red colour, denser than natural, and infiltrated with serum. A piece of bone of an irregular shape was found lying in one of the larger branches of the bronchiæ on the right side, and the mucous membrane in the neighbourhood was thickened, irregular on its surface, and vascular. The heart was natural; the liver was rather large, with some apparent hypertrophy of the gray matter. Both kidneys were pale, and the fibrous structure was in some places obliterated by the usual deposition. The urine found in the bladder was strongly coagulable.

Case XXXVI.—*William Skillan*, aged 55, a porter, was admitted into the Clinical Ward on the 4th of July 1831, with the symptoms of bronchitis or pneumonia, supposed to be caused by an injury received about a week before. Gangrene of the lungs was suspected from the fetid odour of the expectoration. I examined him on the 16th, and found, in addition to the usual signs of extensive bronchitis of both lungs, that the sound on percussion was dull, and the sound of respiration inaudible, over the whole of the lower part of the right lung. He had no dropsy. He died on the 30th.

Inspection.—There was a considerable portion of the lower part of the right lung in a state of gangrene, and the rest was much condensed and friable. There was also some condensation and serous infiltration of the left lung. There was a good deal of bony deposition in the aorta, with some ulceration of its inner coat. Both kidneys were of a mottled gray and purple colour externally, and internally there was much deposition of gray granular matter in the cortical substance, which had encroached considerably on the tubular portions. A little urine obtained from the bladder was found to be coagulable.

Case XXXVII.—*Alexander Henderson*, about fifty years of age, was admitted into the Surgical Wards on the 16th of July, with an ulcer of the left leg of twelve months duration. He had an attack of erysipelas of the left foot eight days before his admission, and the whole of the integuments were much swollen and livid. About the beginning of August he was seized with diarrhœa, which continued till his death. On the 16th of August, he had a rigor, followed by occasional convulsive fits and vomiting of all ingesta, with frequent, small, and weak pulse, and cold extremities. His urine was stated to be passed in good quantity, and he had no dropsy. A profuse thin discharge continued from the foot and leg. He died comatose on the 18th.

Inspection.—There was some serous effusion beneath the arachnoid membrane, giving it a milky appearance, and there was considerable effusion at the base of the brain. The blood-vessels were not turgid, and there was no disease of the substance of the brain; the ventricles did not contain more than the usual quantity of serum. The lungs and heart were healthy; the liver was of a mottled grayish and yellow colour, and slightly granular in structure. There was a deposition of minute granules of lymph on the mucous membrane of the lower end of the ileum, which was vascular and somewhat thickened, but without ulceration. Both kidneys were somewhat mottled externally, and internally much of the cortical substance presented a granular appearance, and in the left much of the tubular portion was obliterated. The urine obtained from the bladder was found to be coagulable.

In the following case, for which I am indebted to Dr Duncan, there was slight œdema of the legs at first, but it soon disappeared, and the symptoms of disease of the lungs and heart were alone prominent. I have therefore thought it right to insert it in this place, as the urine was not examined during life.

Case XXXVIII.—*Isabella Mackenzie*, aged 53, was admitted into the Clinical Ward on the 9th of March 1830, labouring under severe dyspnœa, with cough coming on in frequent paroxysms, and frothy mucous expectoration mixed with blood. She could only lie on the left side, which was dull on percussion, while the right was resonant. She complained of pain of loins and under the sternum, and she had occasional palpitation. Her complaints were of some years standing, and commenced subsequently to the sudden cessation of the catamenia. A few days before her admission she had profuse hæmoptysis, which left her in a state of great exhaustion. The impulse of the heart's action was stronger than natural, and was felt over a considerable extent of surface. Her pulse was very small and indistinct; she had much sweating, and obstinate diarrhœa; the dyspnœa became more urgent, with difficult expectoration, and she had some delirium. She died on the 24th.

Inspection.—The left lung was very much condensed and disorganized, and contained many small cavities. There was effusion of lymph on the pericardium, and on the surface of the heart, with partial adhesion betwixt them. The mitral and aortic valves were much diseased, and there was hypertrophy of the left ventricle. There was extensive aneurism of the thoracic aorta, which adhered strongly to the left lung and to the spine, and had caused caries of several of the dorsal vertebræ. The liver was enlarged, mottled, and granular. Both kidneys were of a mottled yellow and red colour externally, and internally the fibrous structure of the cortical substance was obliterated by the deposition of a pale yellow granular matter, which had also encroached upon the tubular portions, nearly obliterating some of the tubuli. A drawing of the appearances has been preserved. The urine obtained from the bladder yielded a copious coagulum on the application of heat.

Case XXXIX.—*Agnes Smith*, aged 47, was admitted under my care on the 10th of February 1831, on account of pectoral complaints of three years standing, but which had latterly become aggravated. The signs of catarrh were heard on both sides of the chest, and the sound of respiration was generally faint. The sound on percussion was duller under the left clavicle than under the right. She complained of general pains, but had no dropsy. Two days after her admission she was seized with severe diarrhœa and vomiting, which were scarcely checked by opium and acetate of lead in full doses. It was not ascertained whether or not her urine was scanty. She died comatose on the 17th.

Inspection.—The upper part of the left lung was extensively disorganized by tubercular deposition and ulceration; the right lung was less diseased, but contained a good many tubercles, without excavations. The heart was natural. There was very slight alteration of structure in the liver. The intestinal canal appeared healthy, and no ulcerations could be detected in any part of its course. The right kidney was very much diminished in size; it had a distinctly granular appearance both externally and internally, and its natural fibrous structure could not be traced either in the cortical or tubular portions. The left kidney was also diseased, but in a less degree. No urine could be procured from the bladder.

CASE XL.—*Margaret Jamieson*, aged 28, a widow of cachectic appearance, had amenorrhœa of four years standing, and had been twice in the Hospital during the years 1829 and 1830, on account of chronic rheumatism and wasting of the limbs, by which she was rendered a complete cripple, and diarrhœa, to which she was subject. She was again admitted under my care on the 13th of November 1830, and soon afterwards became distinctly phthisical. All the signs of tubercular excavations were heard extensively over the upper part of the left lung. She died on the 4th of February 1831. She had diarrhœa, but had never any dropsy. The state of the urine was not ascertained.

Inspection.—A very large cavity occupied the upper lobe of the left lung, which was completely disorganized, and there was much tubercular deposition in the upper part of the right lung. The liver was much enlarged, and of a mottled colour and granular appearance, as is commonly observed in phthisis. In one-half of the left kidney the fibrous structure, both of the cortical and tubular portions, was completely obliterated by the deposition of yellowish granular matter. The right kidney was comparatively healthy. No urine was found in the bladder.

CASE XLI.—*Elizabeth Fraser*, aged 41, was admitted under my care on the 14th of May 1830. After exposure to much cold, she had been seized on the morning of her admission with febrile symptoms, pain in the limbs, and tormina, which quickly subsided. On the 15th, she had slight tenderness of the abdomen, without distension. On the 16th, she had much vomiting, which abated for a time under the use of opium, but recurred, along with great debility, frequent, small, and weak pulse, dry tonguè, coldness of the extremities, and some delirium. She did not rally under the free use of stimulants, and died on the 23d. She had no dropsy, and the state of the urine was not ascertained.

Inspection.—There were no decidedly morbid appearance in the stomach. The right kidney was much smaller than natural, and its internal structure was altered, some of the *tubuli*, as well as the cortical substance having assumed a granular appearance. The left kidney appeared more healthy. The liver was healthy. No urine could be obtained from the bladder. Permission was not obtained to examine the other cavities.

Case XLII.—*Susan Smith*, aged 32, had been seized, after exposure to contagion, and eight days before her admission under my care, on the 14th of April 1830, with rigors, headach, and other febrile symptoms; but it afterwards appeared that she had been in bad health for a fortnight previously. When admitted she had much vomiting, with some tenderness of the abdomen; frequent, small, and weak pulse, hurried breathing, and dry tongue. She had several convulsive fits on the morning of the 17th, in one of which she died. She had no dropsy, and the state of the urine was not ascertained.

Inspection.—There was considerable turgescence of the blood-vessels of the pia mater, with some effusion of serum beneath the arachnoid membrane. The ventricles of the brain were somewhat distended, and contained above half an ounce of serum. No morbid appearance could be detected in the stomach or intestines. The liver was healthy. Both kidneys were large, soft, and flabby. A pale yellow, granular matter occupied the place of the cortical substance in both, and had encroached on the tubular portions. No urine could be obtained from the bladder.

Case XLIII.—*Jane Chapman*, aged 40, was admitted into the Surgical Wards on the 12th of March 1831, on account of numerous ulcers on the left leg of three years standing. I was requested to see her on the 14th, and found that she had vomited all ingesta during the previous week. She was very drowsy; her speech was very indistinct and slow; her pulse very small, weak, and irregular; her tongue dry, and extremities cold. Her urine was reported to be very scanty, and none could be obtained. She had no dropsy. It appeared on inquiry, that, besides the ulcers of the leg, she had been in bad health for upwards of three years; that she had frequent vomiting, and obstinate constipation; and that at one time, while under the care of Sir George Ballingall, she had œdema of both legs, with scanty urine. She died comatose on the 15th.

Inspection.—There was considerable serous effusion beneath the arachnoid membrane, and at the base of the brain. The ventricles contained rather more serum than usual. There was no disease of the substance of the brain, which was rather exsanguine. The lungs, heart, stomach, and liver were healthy. The right kidney was much diminished in size, lobulated, and rough externally. The fibrous structure of both the cortical and tubular portions, was almost entirely lost. The whole internal substance was granular, and of a pale, slightly mottled colour. Scarcely any of the *tubuli* could be traced. The left kidney was also much diseased, but was not much diminished in size. The cortical substance had given place to the same granular deposition, and the tubular portion had been much invaded by it. There was no urine in the bladder.

Case XLIV.—*John Hay*, aged 52, a robust labourer, underwent the operation of lithotomy in the Infirmary, on the 21st of March 1831, when a large calculus was extracted. Soon afterwards he complained of pain of the back, and a sensation of fulness and tightness referred to the epigastrium, followed by frequent eructation. On the evening of the 22d, the urine, which had previously flowed copiously from the wound, became scanty. His respiration was hurried and somewhat difficult, with much anxiety, and his pulse small and weak. On the 23d, little or no urine had flowed; his extremities were cold, and he had slight tenderness of the abdomen. He died on the afternoon of that day. He had no dropsy.

Inspection.—The stomach and intestines were much distended. There were no decided marks of inflammation in any part of the alimentary canal, which was in some parts unusually pale. There was considerable infiltration around the wound, some parts of which had assumed a gangrenous appearance. I examined the kidneys, and found them both larger and softer than natural. They were much mottled in colour externally, and exhibited internally much yellow granular deposition in the cortical substance, which encroached considerably on the tubular portions. There was no urine in the bladder, the coats of which were thickened and vascular. The liver, the lungs, and the heart, were healthy.

Case LXV.—*Thomas Hodge*, aged about 50, was admitted under the care of Dr Shortt, on the 23d of May 1831, with swelling, tympanitic distension, and some tenderness of the lower part of the abdomen. He was unable to give a distinct account of the history of his complaints; but it appeared that his bowels were constipated, and that he had passed no urine for twenty-four hours previously. His pulse was frequent, small, and weak, and his tongue dry, with great thirst. He had some retching, but little vomiting. He had no dropsy. No urine flowed on the introduction of the catheter. His extremities became cold, his breathing laborious, and he died comatose on the 25th.

Inspection.—There was extensive peritonitis, with effusion of purulent matter, and flocculi of lymph, in the cavity of the abdomen, and on the surface of the intestines. Both kidneys were rather large and soft. The tubular portions were almost entirely obliterated by the deposition of a yellowish granular matter, which had taken the place of the whole of the cortical substance in both. No urine was found in the bladder.

On reviewing the preceding cases, the first fact which meets us is, that none of the patients were under twenty years of age; while in a considerable proportion of the whole number they were above forty, and one of them had even reached the age of ninety. Nor has our experience in the Infirmary hitherto furnished us with more than one instance of this disease, whether fatal or not, taking place before the age of puberty.

The instance here alluded to has occurred under the care of Dr Christison, while these sheets are passing through the press, in the person of a strumous, emaciated girl, eight years of age. She had been affected with severe cough during an attack of measles, about two months before her death, and this had been succeeded by vomiting, obstinate diarrhœa, scanty urine, ascites, and great œdema of the legs, the hands, the face, and especially of the external labia, which were excoriated, and had begun to slough. Her urine was very pale, 1011 in density, and highly albuminous. There was much tubercular deposition in both lungs. The left was much condensed, and contained several cavities. The heart, the liver, and the spleen were healthy. The intestines were very pale, and their coats thin. Some of the agglomerated glands towards the termination of the ileum were more prominent than usual; but they presented no vascularity or ulceration. There was a very minute granular deposition of lymph on the mucous membrane in various parts of the colon. Both kidneys were of a mottled yellow or red colour externally, and the right was somewhat diminished in size. The cortical substance in both was of a yellow colour, somewhat resembling the appearance of fat, and in many places distinctly granular. It contrasted strongly with the red or purple colour of the tubular portions, which had been much invaded by it in some places, and especially in the right kidney.

This infrequency of the disease among children and young persons before the age of puberty would seem to be confirmed by a reference to the results of Dr Bright's experience. In his cases a large proportion also occurred in persons of middle age, or somewhat advanced in life, and out of the whole number of twenty-four, there was only one in which the patient was below the age of puberty. This, which was also a complicated case, occurred in the person of a boy, about fourteen years of age, and the alteration of structure in the kidneys was combined with great enlargement of the liver, as well as disease of the heart.

These cases also amply confirm the statements of Dr Bright, in regard to the frequency and danger of the complications of this disease with various affections of other internal organs; but it does not appear from them that the serous membranes are more particularly the seat of inflammatory action in such cases, as he had been led to conclude from the result of his own experience. Thus, out of the whole forty-five cases, dissections were obtained in forty-one; and in thirty-five of these, the lungs, the heart, the liver, or the intestines were found diseased to a greater or less degree, and in the following proportion. In twenty-two, the lungs were decidedly diseased. Of these, eight were well-marked cases of phthisis, and the rest presented various degrees of bronchitis and condensation or disorganization of the pulmonary substance. In four only was the pleura inflamed to any extent. In seventeen, the liver was more or less diseased in its texture. In twelve, exclusive of those in which the state of the liver was not particularly remarked, it was healthy in appearance. In seven, the heart and great vessels were more or less diseased; but effusion of lymph or adhesion of the pericardium to the heart only existed in two of these. In eight, there was some vascularity, thickening, softening, or ulceration of the mucous membrane of the small or great intestines; and in four, there were marks of peritoneal inflammation.

The urine was ascertained to have become exceedingly scanty, or to have been wholly suppressed for four-and-twenty hours or upwards before death, in eight out of the forty-one cases. In five of these, more or less of coma and other head symptoms preceded the fatal termination; but in three, there was no comatose tendency, although in one, that of *Robert Johnston*, (Case 25,) the secretion of urine had been almost totally suppressed for nine days. It is proper, however, to remark, that in two of these three cases, there was obstinate diarrhœa before death, and that the third occurred after the operation of lithotomy. With the exception of the woman *Carmichael*, (2,) who had organic tubercular disease of the brain, the case of *William Wilson* (6) is the only one in this collection in which the symptoms that supervened on the disease of the kidneys, seen in its advanced stage, were distinctly referable to the head. The urgent headach, vomiting, and dimness of sight, continuing and increasing in this case as the urine became scanty and ultimately almost suppressed, gave reason to expect effusion within the cranium; and on a review of the case, after its fatal termination, it might be said, that, as the secreting substance of the kidneys had been gradually absorbed away, so the symptoms which had attended that change, although much slower in their progress, were very similar to those which usually attend the sudden suppression of urine in ischuria renalis. Perhaps the same observation may be applied to the case of *Jane Chapman* (43.) The case of *Robert Stewart*, (5,) which ought perhaps to have been placed under the second head, from the prominence of the pectoral symptoms, was probably one of the same kind towards its termination, as the symptoms referable to the head resembled those in *Wilson*, and the kidneys had undergone a similar change of structure. In this case, however, the state of the brain was not ascertained.

In ten out of eleven cases in which the head was examined, more or less of serous effusion was found on the surface, in the ventricles, or at the base of the brain. But in most of these there was no unusual vascularity. In seven cases out of the forty-one, no disease could be detected in any other organ of the body except the kidneys.

But perhaps the most important point established by these cases is the fact, that this alteration of structure in the kidneys frequently exists, sometimes even to a great extent, and proves fatal without giving rise to dropsical effusion in any form. Dr Bright has only given two cases in which no mention is made of the presence of dropsy; one of them being the complicated case of the boy already mentioned, and the other a case in which the disease of the kidney was combined with phthisis and gangrene of the lungs, and the urine was only ascertained to be coagulable after death. Nor does he appear to have drawn any conclusion from these two examples. Out of the whole forty-five cases detailed above, there was no dropsical effusion in twenty, in all of which the kidneys were found more or less diseased: in five of these, the urine was ascertained to be albuminous during life, and in eight, after death.

In those cases which were accompanied with dropsical effusion, the œdema, although generally obstinate, was seldom so considerable as to cause distension of the limbs; and it was only necessary, in the Hospital at least, to have recourse to the operation of tapping in one case (11,) and in that the disease of the kidney was complicated with great disease of the liver. It will be observed, that in many of these cases, the dropsical effusion had either been much diminished, or had entirely disappeared before death. This, as well as some other points connected with the subject, will be more fully considered in the Second Part of the present paper, which will contain the histories of those cases which have been relieved or restored for a time to apparent health, along with some general observations on the nature of this peculiar disease.

August 1831.

ART. V.—*Case of Imperforate Anus where the Child was saved by an opening made into the Bladder.* By WILLIAM FERGUSSON, Fellow of the Royal College of Surgeons of Edinburgh.

MARCH 3d, I was requested by Dr William Campbell to see a child in the North Back of the Canongate which had been born twelve hours before, and since that time was remarked by the friends to have passed nothing by the anus; indeed there appeared to them to be no opening present.

When Dr Campbell and I saw the child, which was a male, it appeared evident that there was no anus, and in its place, or near where it should have been in the perineum, the skin had a brownish appearance; but there was no trace of an opening having ever existed at this part. The child was of a full size, and appeared perfectly healthy and strong, but during the day had vomited frequently a matter of a dark colour. On feeling the perineum, a very indistinct tumour could be distinguished, situated at a considerable distance from the surface; but it was impossible to say whether this was the rectum or not. The abdomen was much distended, and no particular prominence appeared at any part.

The mother of the child being told that an operation was the only way to save its life, agreed readily to any thing that might be done for its relief, and accordingly one was determined on; but before commencing, it was a question whether to try for the rectum in the perineum, or to cut at once into the sigmoid flexure of the colon, in the left inguinal region. On consulting with Dr Campbell and Dr Knox, the perineum was the part we determined on cutting into, and, accordingly, I commenced the operation in the presence of the above-named gentlemen, Mr Rae, a very intelligent student of medicine, who had charge of the mother and child, and a number of friends. I made an incision along the *raphe* of the perineum, from the scrotum to the extremity of the coccygeal bones, which could be felt distinctly through the integuments. I dissected cautiously in the usual situation of the rectum, but came upon no gut in any part of the wound. I exposed the neck of the bladder, of which I was convinced by introducing a curved silver probe into its cavity,—a proceeding which I found of great convenience and assistance, in guarding me from injuring the bladder, of which accident there was very considerable danger. I took care, when making my incisions, to cut close upon the sacrum, to avoid harm as much as possible. I carried my incisions to the depth of an inch and a half, or as far as I judged to be about the upper part of the sacrum, but still no intestine could be felt; and it was therefore evident that nothing further could be done for the child in this direction. It was then decided that we should wait until an early hour next morning, to try whether the increased tension of the bowels, which we naturally expected would take place, would render any projection more distinct in the bottom of the wound in the perineum. We were rather inclined to think that a communication existed between the bladder and rectum, for on pressing in the situation of the wound, and on the abdomen at the same time, a little dark-coloured fluid came from the urethra, as if it were urine mixed with meconium. Clear urine passed along at intervals, however; and we could not decide positively as to the communication, more particularly as the operation was done in candle-light.

Next morning the same gentlemen met again at half past six, and I proceeded to examine the state of the parts in the perineum. The child at this moment passed a small stream of clear urine, and immediately after a drop or two of meconium, so that now there was no doubt as to the communication of the intestinal canal with the urinary bladder. We then decided that the proper operation was to cut into this viscus, and accordingly I made an incision into its lower fundus, as nearly in the mesial line as I could, and a little behind the position of the prostate gland. I was guided in this incision by a straight silver director, which I had introduced into the bladder previous to the operation. To our great satisfaction the meconium flowed out after making the incision. I allowed as much to run out as would, and then introduced a small glyster-pipe attached to a bag of warm water, and washed out the cavity that had been opened into. As there was no danger at this period of the wound healing, I left the parts undressed, determined to act according to circumstances which might occur afterwards. It is needless for me to state here the details of these circumstances; suffice it to say, that from the day of the operation to the present period, the child has been in perfect health. The wound in the perineum has closed to such a size as only to admit a common sized bougie, which I introduce frequently, to prevent it closing altogether, to which there is a great tendency. I have once deemed it necessary to enlarge the opening with a probe-pointed bistoury, which seemed to produce little inconvenience to the child. The feces have passed, either in whole or in part, through the opening in the perineum; and when they did not pass wholly through this opening, the rest came by the urethra. What is very remarkable in the case is, that, so far as I have remarked, not a single drop of urine has passed by the artificial opening It has all along passed in a clear stream, or mixed with feces, by the urethra.

I shall hazard no conjecture with regard to the nature of the communication existing between the intestinal canal and the urinary bladder, as I consider this a matter of great difficulty to decide upon. But should the child die, and the friends have no objection to an examination of the body, I shall certainly record the exact state of the parts.

Since writing the above, an abscess formed over the back part of the sacrum, from which I discharged a considerable quantity of healthy matter. It soon healed up again, and at present the child is as healthy as children usually are at its age. The feces for days together pass through the opening in the perineum; and it is only occasionally that a few drops come by the urethra. I see the child once a week, and generally introduce a bougie to keep the opening of a proper size.

In examining the remarks of various writers on this kind of malformation, I have not met with any account of a case similar to the one I have just related. In the Edin. Med. Commentaries, Vols. iv. vi and x. cases of imperforate anus are described. In the Edin. Med. and Surg. Journal, Vol. xvii. there is another case; but none of these resemble the above. Mr Samuel Cooper, in his Surgical Dictionary, alludes to similar cases, and recommends an early operation, by cutting into the bladder, as the only chance of saving the child. Sabatier, in his Médicine Opératoire, Vol. iii. p. 330, makes some very valuable remarks on this malformation. In cases where the rectum terminates deep in the pelvis, either by passing into the bladder or otherwise, he says that it is in vain we trust to the *lights* of anatomy; and observes, that some are inclined to agree with Littre, who proposed to make an opening into the belly at once, and thus establish an artificial anus. He is not aware that the operation has ever been performed by any other individual than Duret, a naval surgeon at Brest, who, after plunging a bistoury into the perineum of a child with an imperforate anus, and being unable to reach the rectum, determined to cut into the sigmoid flexure of the colon, which he accordingly did, and with great success; for at the time Sabatier wrote, the child was twenty-five months old.

Calisen, in a case of this nature, proposes to cut into the left portion of the colon in the lumbar region, in order to avoid the necessity of opening into the peritoneum, and performed the operation on a dead child with an imperforate anus. He, however, did not hit upon the gut, but opened into the peritonæum. He found he had made his incision too far in front, and made another further back, which enabled him to make the opening in the gut in the manner he wished. He confesses, however, that his fingers introduced into the first wound were of great service in guiding him in the second operation. In my opinion, no one can cut in this situation, with a certainty of not wounding the peritoneum, in endeavouring to get into the back part of the gut; and it appears to me, that, if this membrane is to be cut into, it had better be done more in front, as the dangers and difficulties in this situation are less than near the spinal column. I am inclined to think, that a proposal to cut into any portion of the left side of the colon without injuring the peritoneum, either on the young or old subject, must have been made from a very limited anatomical experience; for, from what I have seen, I am positive that not one case in twenty would have admitted of an operation of the nature proposed. I make this statement as to numbers, however, merely at random, not having kept any exact account.

In the *Dictionnaire des Sciences Médicales*, the reader will find a most interesting account of the various kinds of imperforate anus that have been met with; but, as it is not my intention here to enter minutely on their consideration, I shall merely refer to the fifth kind spoken of in that article. Under this head the writer remarks, that when the rectum communicates with the bladder, the malformation is almost always fatal. The following case, taken from Flajani, (*Osservazioni di Chirurgia*, T. iv. Obs. 39,) seems to me to have a little resemblance to the one I have related, and, for various reasons, is one of a very interesting nature; it shows how long a child may live under similar circumstances, and it also, in my opinion, shows clearly the necessity of pressing an early operation.

It would appear that the child whose case Flajani relates was not particularly remarked as having any malformation until the age of four months; as he says, it was at this time only that no trace of an aperture could be perceived. The feces were passed by the urethra; and in other respects it was perfectly well. The perineum and scrotum were in a natural state. The belly frequently became tumefied; and, until the feces were voided, the child appeared to suffer much. Matters continued in this state for three months, the mother constantly refusing to consent to any operation. At the end of this period, however, it became absolutely necessary that an operation should be performed; and one was accordingly attempted in the perineum, but seems to have failed completely, for no feculent matter was discharged. An hour afterwards feces were passed by the urethra, which relieved the child; and it lived for two months more under great occasional distress. At nine months old it died convulsed, with its belly excessively distended. On examination after death, the colon and greater part of the intestines were found very much distended with hardened feces. The rectum was three inches in length, and terminated by a canal four inches long, which, passing under the prostate gland, opened into the membranous portion of the urethra. At this part a cherry-stone was found sticking, so as to prevent the passage of the feces along the urethra. Morgagni, Bonet, Morand, and Desault, all cite examples where infants were observed to pass their urine mixed with meconium. M. Dumas reported a similar case to the Societies of Medicine in Paris and Lyons, in which he thought it necessary to make an artificial anus. M. Martin the younger, surgeon at Lyons, believes that in such a case it would be better to make an incision in the neck of the bladder by the perineum.

It must be evident there was something wrong in the operation in Flajani's case; for surely there could have been no difficulty in reaching the canal, four inches in length, (which I take to have been the continuation of the rectum) more particularly as it passed into the membranous portion of the urethra, and must then have been rather superficial.

Dr Thatcher has had the kindness to show me a preparation in his museum, taken from the body of a child on whom Mr Lizars operated. In this case the rectum communicated with the bladder, and before the surgeon came upon the gut he had to cut very deep. The operation seems to have been perfectly successful, as the child lived in good health for three weeks, when it suddenly died of convulsions. On dissection the rectum was found to terminate by a large open extremity in the bladder. The preparation shows that a larger opening had been made in the back part of the rectum, opposite the upper portion of the sacrum. During life the child laboured under other disadvantageous circumstances; for from birth there was a tumour, having a feeling of fluctuation, situated over the dorsum of the ileum, and the parts had a peculiar appearance, extending up towards the spinal column. This tumour was found to be an abscess filled with unhealthy pus, which extended upwards into the canal of the lumbar portion of the spinal column. It seems extremely probable that the death of the child was occasioned by the presence of this matter causing pressure on the contents of the spinal canal.

The operation in the case which has occurred to me, I have no doubt has been of essential service to the child; for though it is possible it may have survived for a certain time without any interference, like the case related by Flajani, it is more than probable it would have died; and this probability would have been still more increased as it advanced in age. I cannot, therefore, agree with the expressions made use of by the late celebrated Dr Baillie, who, if I completely understand him, has given a very decided opinion against any operation being successful. In his work on Morbid Anatomy, the following lines will be found, which seem to bear me out in what I have said. "I have also seen the rectum terminate in the bladder, from an original error in the formation, so that there was no other external opening to the rectum than by the urethra. This was in a child at birth. The malformation was of such a kind as neither to admit of a remedy by art, nor to allow of life being continued."

Now, whether Dr Baillie meant to say, that in the case or cases which came under his notice, the malformation was of such a peculiar kind that no operation would have been of service, I will not take it upon me to say; but this much is evident, that in certain cases, where the rectum or intestinal canal has communicated with the bladder, the operation of cutting into the latter organ has allowed of "life being continued."

6, *Hill Square*,
1*st August* 1831.

ART VI.—*On the Preparation of the Hydriodate of Potash.* By WILLIAM GREGORY, M. D. Fellow of the Royal College of Physicians, and Lecturer on Chemistry.

THE processes given in elementary works of chemistry for preparing the hydriodate of potash are three:

1. That which consists in neutralizing hydriodic acid with carbonate of potash. This process is inconvenient, because the hydriodic acid cannot be kept ready made, from the facility with which it undergoes spontaneous decomposition.

2. That proposed by Baup; who decomposes hydriodate of iron by carbonate of potash, filters to separate the oxide of iron and crystallizes. The solutions in this process are necessarily bulky; and it is somewhat troublesome to observe the exact

point of saturation, so as to avoid an excess either of iron or of carbonate of potash.

3. The process recommended by Dr Turner, in which iodine is added in excess to a solution of pure potash, by which iodate and hydriodate of potash are formed together by the decomposition of water, and the iodate is afterwards converted into hydriodate by a stream of sulphuretted hydrogen gas. Besides the disagreeable nature of this latter part of the process, I have observed that a portion of sulphur often adheres to the salt and renders it impure; although this is not always the case, nor is it easy to say in what state of combination the sulphur exists.

The process which I now employ is in the first step the same as the last mentioned, but has the advantage over it in simplicity and in the shortness of the time required for its performance; insomuch that any one possessing a metallic crucible, say of silver, of three or four ounces capacity, and an apparatus by which it can be heated red hot, may prepare for himself several ounces in the course of a forenoon.

I take any quantity of iodine, and dissolve it with the aid of heat in the solution of pure potash. Enough potash must be added to form a solution having a pretty strong yellow colour, and if too much has been used so as to destroy the colour, iodine must be added till the colour is restored. The solution is then evaporated to dryness. The dry mass, consisting of iodate of potash and iodide of potassium, is now to be exposed to a gradually increasing heat, till it acquires a pretty full red heat, in a covered crucible of platinum or silver. The salt melts and the iodate of potash undergoes a decomposition exactly analogous to that which takes place in the chlorate of potash when exposed to a red heat. The whole of the oxygen, both of the acid and the potash, is expelled, and iodide of potassium remains; so that the whole of the iodine is now in the form of iodide of potassium, or hydriodate of potash. The heat must be continued at the same degree for about half an hour. When cold, the melted mass is softened out of the crucible with hot water, and dissolved in a moderate quantity of that liquid. If necessary, it is filtered, and the filtered solution is then evaporated to dryness by a gentle heat[*] when a snow white crystalline salt is obtained. To ascertain whether the decomposition of the iodate has been complete, a small quantity of the salt is tested in a tube with alcohol, which ought to dissolve it entirely with the aid of heat. If any remains undissolved, and if the undissolved portion dissolves in water, and causes a white precipitate with acetate of lead, it is a proof that some undecomposed iodate is still present, and the salt must be again heated to redness until it stands the above test. A little practice renders it quite easy to know the proper degree of heat, and how long it should be continued.

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[*] Not above 212°, because even pure salt becomes brown from disengaged iodine if dried at a high temperature.

The salt thus obtained is white and crystalline, deliquescing slightly in the air. It is easily soluble both in water and alcohol, especially if heat be applied. Its solution gives with a solution of corrosive sublimate a precipitate which at first is pink, but speedily changes to a bright scarlet. With acetate of lead it gives a bright yellow precipitate of iodide of lead, which is crystalline if the solution be slightly acid and very dilute.[*]

ART. VII.—*Instructions which were issued to the Army by the Medical Board with the sanction of the Right Honourable Major-General Sir Henry Hardinge, G. C. B., when he was Secretary at War.*

Instructions for the Guidance of Staff and Regimental Officers belonging to the Medical Department, in the duty of examining Recruits who may be brought before them for Inspection.

I. THE leading object of the following instructions is to guard against the approval of recruits for the army, whose health of body or mind is unsound, who have any suspected taint of disease or disability, and who, at the period of inspection, are incapable of undergoing the fatigue to which troops are liable.

II. Medical officers of the army are from their professional knowledge and experience of the duties of a soldier, presumed to be capable of forming a correct opinion of the health of recruits, their capacity for exertion and general efficiency. The external characters of a sound constitution and efficient limbs may be briefly stated, viz. a tolerably just proportion between the trunk and different members of the body; a countenance expressive of health with a lively eye; skin firm and elastic; lips red; teeth in good condition; voice strong; chest capacious and well formed; belly lank; limbs muscular; feet arched and of a moderate length; hands rather large than small. The reverse of these marks of a good constitution and efficiency, may be considered to indicate infirm health or inefficiency.

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[*] M. Caventou has lately brought forward as a new observation, the fact, that iodide of lead is soluble in boiling water, and is deposited on cooling in golden scales. In the month of July 1830, six or seven months before M. Caventou made his experiments, I observed the same phenomenon, and exactly in the way M. Caventou did, that is, washing with hot water on a filter the precipitated iodide of lead, which I then thought insoluble. Struck with the beauty of the product, I prepared a considerable quantity of it with a view to the analysis of it. But on looking into the 2d edition of Dr Turner's Elements of Chemistry, published in 1828, I found the fact mentioned, so that, presuming it to be well known to chemists in general, I did not bring forward the observation I had made. Dr Turner does not mention who first observed this fact; but I see by a late number of the Journal de Pharmacie, that M. Boullay was aware of it in 1827.

III. The question of fitness or unfitness of a recruit, must in a great measure be determined by the discretion and experience of the officer who inspects him; for no rule can be formed of so definite a character as to dispense with the exercise of the deliberate reflection and judgment of a medical officer.

IV. As soldiers are liable to serve in every variety of climate, to endure great changes of temperature, to be exposed to frequent vicissitudes of weather, to undergo much fatigue, to brave the greatest danger, and often to sustain considerable privations of the common necessaries of life, recruits should possess vigorous constitutions and great muscular capability;—hence no man ought to be approved for the service whose health is unsound, and who does not possess adequate strength for the duties which he may be called upon to perform.

V. The following enumeration of the more common causes for which a recruit should be rejected, when any of them exist to such a degree as will immediately, or in all probability may at no very distant period impair a man's efficiency, is intended as a general guide to medical officers in the performance of the duty of inspecting recruits:—1. Feeble constitution: Unsound health from whatever cause, indications of former disease, as leech bites, traces of blisters, thereby showing a liability to infirm health, nodes, glandular swellings, or other symptoms of scrofula, &c. &c.—2. Weak or disordered intellect.—3. Chronic cutaneous affections, especially of the scalp.—4. Severe injuries of the bones of the head.—5. Impaired vision from whatever cause, inflammatory affections of the eyelids, immobility, or irregularity of the iris, fistula lachrymalis, &c. &c.—6. Deafness, copious discharge from the ears.—7. Loss of many teeth, or the teeth generally unsound.—8. Impediment of speech.—9. Want of due capacity of the chest, and any other indication of a liability to pulmonic disease.—10. Impaired or inadequate efficiency of one or both of the superior extremities on account of palsy, old fractures, especially of the clavicle, contraction of a joint, mutilation, extenuation, deformity, ganglions, &c. &c.—11. An unnatural excurvature, or incurvature of the spine.—12. Hernia, or a tendency to that disability from preternatural enlargement of the abdominal ring.—13. A varicose state of the veins of the scrotum or spermatic cord; sarcocele, hydrocele, hemorrhoids, fistula in perineo.—14. Impaired or inadequate efficiency of one or both of the inferior extremities on account of varicose veins, old fractures, malformation, (flat feet, &c.) palsy or lameness, contraction, mutilation, extenuation, enlargement, unequal length, bunions, overlying or supernumerary toes, ganglions, &c. &c.—15. Ulcers, or unsound cicatrices of ulcers likely to break out afresh.—16. Traces of corporal punishment. (This circumstance is an unqualified cause of rejection in regard to recruits.)—17. Diseases, whether acute or chronic, for which medical treatment is required.

VI. Every recruit is to be undressed before inspection; and it is directed that the examination shall be conducted agreeably to the following routine, by which means blemishes are not likely to escape detection.

VII. Upon entering the inspection-room, the recruit is to walk a few times pretty smartly across the apartment, for the purpose of showing that he has the perfect use of his lower extremities. He is then to be halted, and set up in the position of a soldier under arms, with the knees about an inch apart, and examined both in front and rear from head to foot. Should no material defect be discovered during this survey, the examination may go on. The recruit is then to perform, in imitation of the hospital-serjeant, the following evolutions:—To extend the arms at right angles with the trunk of the body; then to touch the shoulders with the fingers; next to place the backs of the hands together above the head: in this position let him cough, while at the same time the examiner's hand is applied to the rings of the external oblique muscles. Let the inspecting-officer examine the spermatic chord and testes; then pass his hands over the bones of the legs. The recruit is next to be made to stand upon one foot, and move the ankle joint of each extremity alternately. When any doubt is entertained respecting the efficiency of this joint, or any part of an inferior extremity, he should be made to test his strength by hopping upon the suspected limb for a short period; and the size and aspect of the corresponding joint or part of the opposite limb should also be accurately compared. He is next to kneel on one knee, then on the other, and subsequently on both knees. Let him then stoop forwards, and place his hands on the ground, and while in this position, it ought to be ascertained whether he be affected with hemorrhoids.

He is then to extend the superior extremities forward, for the purpose of having his arms and hands examined, and with this intention he is to perform flexion and extension of the fingers, and to rotate the fore-arm.

The head is next to be examined, including the scalp, ears, eyes, nose, mouth: the surgeon is then to ascertain that he possesses the function of hearing, and the faculty of distinct enunciation. In regard to the mental faculties, the inspecting medical officer should invariably ask a recruit a few short questions, as what corps he belongs to, or what occupation he had previously followed, &c. &c., or adopt any other means which he may deem necessary to ascertain the condition of the intellect.

VIII. The next point is to learn whether a recruit has passed through small-pox, or has been vaccinated.

IX. When a recruit is approved, the attestation is to be filled up, and signed by the inspecting medical officer.

X. Under the head, "Remarks and Observations," in the register for recruits, all incidental facts of importance, in regard to each individual case, are to be recorded, including the causes on account of which recruits are rejected; blemishes, peculiar marks, &c.

XI. Should a medical officer, or a private medical practitioner, intermediately approve of a recruit who has a trivial blemish, such as a slight cicatrix on the leg, he is to inform the surgeon of the corps to which the man belongs of the circumstance. He is also to inform him when he detects a recruit, previously examined, simulating disabilities: the requisite information on those subjects may be conveyed by means of attaching a slip of paper to a man's attestation. District surgeons are also directed to conform with this rule.

XII. The signature of a medical officer to an attestation will be considered tantamount to a declaration, that he had personally examined the recruit in question, according to the routine mode above described, and that the man had no blemish except that which is affixed to the attestation.

XIII. The certificate of surgeons or assistant surgeons of regiments, when they approve of recruits for the corps to which they themselves belong, will be considered final.

XIV. Recruits who have been intermediately approved by a regimental medical officer, or by a medical officer on the staff, under the rank of staff-surgeon, or by a private practitioner, are to be re-examined by a district staff-surgeon, or by a medical officer of the regiment to which they belong. Should a district surgeon consider an intermediately approved recruit ineligible for the service, the man in question is to be reported to the inspecting field-officer, for the purpose of being brought before a board of medical officers, whose decision in regard to his eligibility or ineligibility shall be final. Whenever a medical board cannot be assembled, a reference shall be made by order of the director-general to any army medical officer whom he may appoint, or he will, on the reports received, decide upon the case himself.

XV. A similar course will be adopted with respect to intermediately approved recruits, that may be deemed ineligible by a regimental medical officer of the corps to which a man belongs.—*Vide Form of Returns, Nos.* 1 *and* 2.

XVI. The certificate of a district staff-surgeon, in regard to the fitness of a recruit for the service, will be deemed a final approval, in as far as respects a medical examination, except in the case of recruits for the Honourable East India Company's Service.

XVII. To enable a man who secures a deserter to receive the usual reward, a certificate of his fitness for the service must be produced to the magistrate who commits him. In the examination of a deserter, medical officers will recollect that he is already in the service, consequently he should not be found unfit for military duty, unless he suffers under a serious disqualifying disability, such as would render it necessary to discharge a soldier from the army.

XVIII. Every recruit who has not passed through small-pox, or the vaccine disease, is, if possible, to be vaccinated by the inspecting medical officer; and if the exigencies of the service will not permit this being done, the circumstance is to be reported to the surgeon of the corps to which a man belongs.

XIX. The books required to be kept, in regard to this branch of the duty of a medical officer, are,—1. A register of recruits, which is to be ruled so as to contain the following heads: A, date of examination.—B, regiment.—C, name of each recruit.—D, age.—E, country of birth, (as England, Ireland, or Scotland.)—F, previous occupation, or station in life.—G, small-pox or cow-pox.—H, remarks and observations. 2. A letter and return-book.—3. A vaccination register.

XX. Medical officers attached to recruiting-depots will forward to the director-general a numerical return, dated on the 1st of each month, of the recruits examined, with the numbers rejected and approved during the preceding month.

XXI. District-surgeons and regimental medical officers are directed to transmit to the director-general an annual return of the recruits they examine.—*Vide form of Return, No.* 3.

XXII. When district-surgeons have the charge of sick, they are to comply with the regulations issued for the guidance of regimental medical officers in the exercise of their duty, and to forward similar returns.

Form of Return, No. 1.—Return of (one or more recruits who have joined the recruiting-depot or regiment,) and who upon examination have been considered ineligible for his Majesty's service.—Name; date of enlistment; intermediately approved by —— cause of ineligibility. Signatures —— Surgeon —— Commanding officer.

Form of Return, No. 2.—Proceedings of a board of medical officers, assembled by order of ——— for the purpose of reporting upon the state of A. B. a recruit, who has been considered ineligible for service, by

—— —— —— Members of the board.

The board having carefully examined A. B., a recruit, belonging to —— regiment, who has been deemed ineligible for the service by ———— in consequence of [*here insert the cause of the alleged disability*,] and find that he [*here describe the kind and degree of whatever disability he may labour under.*] We are of opinion that the above-named recruit is —— for the service.

Signatures of the members of the board —— —— ——

Form of Return, No. 3.—Return of recruits inspected at the recruiting-depot —— or regiment, from the 1st January —— to the 31st December —— inclusive.

Approved. —Rejected. —Total inspected.

Causes of Rejection.—Unsound health; weak intellect; traces of scrofula; muscular tenuity; chronic cutaneous affections; specks on the cornea; cataract; deafness; loss of many teeth; defective condition of the superior extremities, in consequence of old fractures, contractions, &c. &c.; deformed spine; hernia, inguinal, right side, left side; laxity of the ring of the external oblique muscles, both sides, right side, left side; varicose veins, left spermatic chord; ditto right ditto; disease of the left testicle; ditto of the right ditto; hydrocele, both testicles; ditto right; ditto left; defective condition of the inferior extremities in consequence of old fractures; malformation, &c. &c. &c.; varicose veins of both legs; ditto of the right leg; ditto of the left; ulcers, wounds, or cicatrices of ditto; traces of corporal punishment, &c. &c. &c.

Instructions to Staff and Regimental Medical Officers relative to Soldiers brought forward for Discharge as unfit for Service.

1. Medical staff-officers will make themselves intimately acquainted with his Majesty's warrant of the 14th day of November 1829, the general orders of the 1st January 1830, and the circular letter of the 22d January, from the Army Medical Board. (The circular letter of the 14th July 1830 is consolidated with the present instructions.)

2. They are carefully to examine each man who may be

brought forward for inspection, and the points to which they will especially direct their attention are, whether an alleged disability actually exists,—how far an infirmity disables a man for the service,—and if it be probable the disability will permanently disqualify the soldier for military duty.

3. Opposite to the name of each man on the return, (*vide No.* 7,) they are conscientiously and candidly to record the result of their investigation.

4. The duty of examining a soldier, and deciding upon his fitness or unfitness for the service, is one of great importance, sometimes of considerable difficulty, and consequently much care should be bestowed upon it. In the execution of this duty, they are directed to spare no pains to verify the reasons assigned for each man's unfitness. Their conclusions will be chiefly derived from personal examination, professional knowledge, and the hospital documents. The observations should be brief, but sufficiently copious to convey the grounds which induced them to arrive at the conclusions conveyed in their remarks.

5. Men under three years' service, who from constitutional infirmities are never likely to become useful and efficient soldiers, may be recommended to be discharged at the summer half-yearly inspections, or at such other periods as by superior authority may be directed, whose cases will be reported according to the subjoined form lettered A, specifying by what medical officer the recruit was approved, the time and place, and the other particulars therein required; medical staff-officers must, however, be particularly careful not to encourage the practice of malingering, by seeming to recommend men to be discharged on slight grounds, or whose alleged disabilities are of doubtful existence. Great care must likewise be taken not to recommend men to be discharged where suspicion may be entertained with regard to the origin of a disability, as in cases of mutilation, and particularly in cases of impaired vision.

6. Medical staff-officers are directed to be very cautious in recommending a man to be discharged who is fit for the performance of any duty. Men, who from length of service, or impaired health during a residence in a foreign climate, or other causes, are disqualified for joining the service companies of a regiment, may still be capable of performing the duties required of the reserve companies, which are always at home.

7. When it has been notified to a regiment that a medical staff-officer will examine the men whom the surgeon of the corps may consider unfit for service, a return, similar to that lettered A, must be made out.

8. The column headed "Brief Account of the Cause and

degree of each Man's Disability," must be filled up with scrupulous accuracy, and sufficiently full to convey the information which a medical staff-officer may require. A clear account of the *origin* of a man's disability is especially necessary in cases of wounds or accidents; and when an infirmity may confer a claim for a pension, it ought to be carefully reported whether the cause of unfitness is likely to be temporary or permanent. The *degree* of a disability is an important feature in a man's case, and hence the account should contain a short notice of the duties for which he is unfit;—it ought also to be stated how long a man has been in hospital for the recovery of the disability, in consequence of which he has been brought forward for examination.

9. To afford sufficient space for the medical staff-officer to insert his observations upon individual cases, the names of the men are not to be nearer to one another on the return than three or four inches.

10. Soldiers should not be brought forward for examination on account of doubtful or trivial and temporary disabilities; although men of this class may not be recommended to be discharged by a medical staff-officer, they are apt to presume upon the sanction of a regimental medical officer, and to make more of a slight infirmity than it really deserves.

Army Medical Department, J. M'Grigor,
30th July 1830. *Director General.*

A

Return of men belonging to the —— regiment under three years' service, and who are proposed for examination in consequence of being considered permanently disabled for the performance of military duty, comprehending the following heads:—Number———Rank and name.—Age, years, months.—Size, feet, inches.—Service, years, months, corps.—Name of the medical officer by whom originally approved as a recruit.—Date on which approved as a recruit.—Place at which approved as a recruit.—Brief account of the cause and degree of each man's disability.—Observations of the medical staff-officer.

Signature of the surgeon —— ——
Signature of the commanding officer —— ——

Art. VIII.—*Experiments on the Reproduction of Bone.* By John Murray, M.D., Aberdeen.

I was induced to make the following experiments, on the source of the callus in necrosis, from observing a case of this disease which could scarcely be explained by any of the theories commonly received in this country. The theory they illustrate is pretty generally received on the Continent, and is the same which Dr Alison teaches in his lectures, viz. that the surrounding soft parts are engaged in the production of the new bone. These cases appear satisfactorily to prove a theory, the adoption of which must lead to such important practical results, that I hope an account of them will not prove uninteresting.

The case above alluded to which first attracted my attention was that of a man, æt. 35, admitted into the Aberdeen Infirmary, on account of an ulcer on his leg. He had suffered under necrosis of the tibia in the same leg about twenty years before, and for some time previous to admission he had fallen off much in flesh. On examining the new bone the *vena saphenu major*, somewhat enlarged, was found imbedded in a groove on its anterior surface. From the emaciation of the patient the parts could be examined without difficulty. By pressing one finger on the vein, and drawing another along its surface, it could easily be emptied, when the hollow in which it ran could be clearly seen, and the sharp edges of the groove distinctly felt through the integuments. In some places the vein was sunk into the bone more than half its diameter, while in other places it ran more superficially. I pointed out this case to several medical friends, who were all fully convinced that the groove was in the bone, and not in hardened cellular substance.

Before making any remarks on this case, I shall relate the results of several experiments made on pigeons, with a view to ascertain the changes which take place on the surrounding parts in the production of the callus.

The death of the bones was induced by introducing a piece of thin wire or wood through a small hole in the lower part of the bone, so as to destroy the medulla, and allowing it to remain in the cavity of the bone. A thin platinum wire was then passed loosely round the bone, and in some cases a straight piece was passed longitudinally along its surface. Very little constitutional disturbance was excited by these operations. In some of the old pigeons there was no attempt towards the reproduction of the bone; the soft parts were merely separated from the bone with a slight effusion of a thin reddish fluid interposed. In general the effusion of callus was very abundant, particularly in those cases where the bone, whose place the new one was to supply, was much employed in the actions of the bird; as, for example, the ulna, to which the pinion feathers are attached, the effusion around which was always far more abundant than round the radius, which in the act of flying is exerted comparatively little. The wire I employed was very thin, and, as platinum is little subject to oxidation, it excited very slight irritation. In one case, where the extremity of the wire had penetrated the muscular structure to a considerable extent, scarcely any symptom of inflammation could be perceived on examination some weeks afterwards.

Exp. 1*st.*—After destroying the medulla, I passed a small platinum wire round the lower extremity of the radius, and twisted it so loosely that it could easily be moved. On examination in thirty-seven days, the tendon of one of the muscles was found included on the posterior surface of the bone. For some distance on either side of this tendon the wire was not covered by the new osseous deposit, but on the anterior surface no trace of the wire could be perceived; it was buried in the substance of the new bone.

Exp. 2*d.*—After destroying the medulla, through a small hole in the lower extremity of the ulna, I passed the wire round the middle of the bone, about half an inch from the hole. I then passed a straight wire, under the circular, longitudinally along the surface of the bone. Twenty-two days after the operation the pigeon was killed, and the body very successfully injected with size and vermilion. The straight wire was projecting through the skin, and very loose. The new periosteum was very vascular, soft, and easily detached from the new bone. It was continuous, with a similar membrane lining the cavity of the bone at the different cloacæ, and at the place where the slip of wood had been introduced to destroy the old bone. The new bone was very large and irregular, and there was a depression in it near the place where the surrounding soft parts had been considerably injured in applying the circular wire. Along the posterior surface of the new bone there were a number of deep depressions, containing the roots of the large pinion feathers. On the superior and external surface, where some of the feathers passed obliquely across the new bone, there were two deep grooves containing feathers, forming about two-thirds of a circle. On making a section of the new bone, which was very vascular, and easily cut, the circular wire was found to have moved considerably nearer to the opening through which the medulla had been destroyed. The action of the muscles on the straight wire had forced open the circular one, probably very soon after the operation, as it was only fastened by one or two twists, and cut very short; in order to leave as little foreign matter in the wound as possible. The wire was in the centre of the substance of the new bone, without any external mark to show its situation. The old bone was lying surrounded by the vascular lining membrane of the new bone. It was white, smooth on its surface, and apparently of its natural size

Exp. 3d.—Another experiment was performed, in every way similar to the last, excepting that the pigeon was killed on the sixth day after the operation. The periosteum was here found very vascular, and the callus in a cartilaginous state, with osseous points diffused through its substance. No trace of the wires could be perceived externally; but on a section being made, they were found buried in the substance of the callus, in the same situation where they had been placed during the operation.

Exp. 4th.—After drawing the integuments to one side, I cut down on the sternum of another pigeon, and after detaching the muscles on either side, removed a triangular piece of the bone; the skin was then brought back to its natural position, and fixed by stitches. The wound went on very well for several days, but as the pigeon, in attempting to fly, fell several times on the breast, a good deal of inflammation, with a very offensive discharge, was excited, and the wound did not heal for some time. The pigeon was killed several weeks after the operation, when a copious osseous deposit was found to have nearly filled up the vacancy made in the bone. It was much thicker than the original bone, and in some places overlapped it for a short distance.

In one of the other experiments, the vessels were found in a groove similar to that described in the case of the man in the Aberdeen Infirmary. In another killed a few days after the operation, new osseous matter was deposited in several places in the interior of the bone. These were the most important of the experiments I had made when I received the preparation of which I have given a sketch, which appeared so satisfactory as to render further experiment superfluous.

A hare had received a compound comminuted fracture by a shot in the right hind-leg, some time before it was killed. The flattened piece of lead was found imbedded in the membrane covering the new bone at (*a*. Fig. 5.) The leg is bent outwards nearly at a right angle, and at the angle there is a very copious deposition of callus. The inferior portion of the tibia (*b*) projects inwards for about an inch at the apex of the angle. It is white, dry, and still firmly attached to the rest of the bone. There is an appearance of an artificial joint formed in the centre of the callus. The portion of the periosteum or ligament which passes over the two external parts at the apex, between which the old tibia projects, is white, shining, and far more dense and strong than that which covers the other part of the new bone. A splinter of the new bone nearly two inches in length, firmly attached by a ring of new bone at the upper, and by ligament at the lower extremity, assists to strengthen the new joint. This part is not seen in the sketch. At the anterior and external part of the bone, the tendons of two of the muscles, (*c*) in passing the angle, were for some distance concealed by the membrane which covered the new bone. In the middle of this sheath, the new osseous matter extended like an arch (*d*) over the tendons. It was about a line in breadth, and of nearly equal thickness. It had the same reddish appearance and hard resisting feel when touched with a knife, as the rest of the new bone. The edges were round, smooth, and distinctly marked, and from these on either side the membrane was continued, which included the tendons. Along the inferior part the tendons lay sunk in the new bone, as in the case first related. One of these tendons can be moved very freely under the arch; the other can also be moved, but less freely.

These cases are unquestionably inconsistent with several of the theories brought forward to explain the formation of callus. No reasoning will be necessary to set aside the theory of the inner surface of the periosteum being its source, nor even the periosteum in any way whatever, while it still retains its character of periosteum, as formerly entertained by many very respectable authors. *

The fourth experiment, in particular, proves that it cannot be the developement of the outer layer, or any change in that part of the old bone, which is the source of the new bone, as stated by Leveillé, &c. It appears to me equally clear that Dr Knox's theory, " that the new bone is formed by the extremities of the old bone, and commences at these extremities, shooting downwards and upwards," is inapplicable to the explanation of these cases, more particularly the case of the hare's leg. Again, why make bone so indispensable to the production of bone in the particular instance of necrosis, when it is acknowledged to be produced in so many instances altogether independently of bone? In fracture of the cartilage of the ribs, no bone is required to produce an osseous union; inflammation of a cartilage produces bone; most of the cartilages in old age become bone; friction of a tendon against a bone produces an osseous deposit. Almost all parts of the body have been found, by morbid changes, converted into bone. Though many of these deposits differ considerably from some of the bones, yet neither their mechanical structure nor chemical composition differs so much from that of others acknowledged to be bones, as to exclude them from that name. The only advantage gained by such an exclusion is the support of a theory which experience has shown to be incorrect.

The simplest, if not the only way of explaining the whole of the facts here stated, is to suppose, that on the death of the old bone, a new action commences in the vessels of the surrounding living structures. The source of the osseous deposit in these cases is various. It must have been muscular in the fourth experiment, as that was the only structure near the bone. In the other cases, the source must have been cellular, fibrous, tendinous, muscular, &c. according to the situation of the part of the bone affected. This allows a very easy explanation of the transference of the origin and insertion of the different muscles, tendons, ligaments, &c. from the old to the new bone.

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* See Wiedmann, Troja, David Richerand, Macdonald, Macartney, &c.

It seems scarcely necessary to advert to such occasional exceptions to the general law, that *all* the surrounding structures furnish callus, as are presented by the situation of the vein in the first case, and that of the tendons in the hare's leg, and in some of the pigeons. Such exceptions are not peculiar to this disease, as in phagedenic ulcerations the blood-vessels and more important parts often remain untouched by the new action, while the surrounding parts are completely absorbed or thrown off as sloughs.

These preparations also prove that the periosteum of the new bone is a new production, and not the old periosteum, as stated by most authors who have treated on this subject.

The preparations illustrating these facts are now in Dr Alison's possession.

ART. IX.—*Description of an Improved Method of inflating the Lungs in Cases of Suspended Animation.* By JAMES ELLIOT, Esq. Surgeon, Dysart.

THE object of the present communication is to recommend to the notice of practitioners a new and simple apparatus, by which the lungs may be inflated in cases of suspended animation by a single operator, without any assistant. According to the principle of this apparatus, the inflation is accomplished by air being impelled from the lungs of the operator, and exhaustion of the chest is next produced by a suction-pump.

The different parts of the instrument may be named according to the mechanism,—1. The curved-pipe (A in the plate;) 2. The mouth-cover (B;) 3. The elastic tube (C;) 4. The valve-pipe (D;) and, 5. The exhausting pump, with its piston (E.) The whole instrument, for the sake of distinction, may be called the Resuscitator.

The curved-pipe A screws on to the valve-pipe at F. It will be necessary to have two or three curved-pipes of various lengths and sizes, to correspond with the age of the patient. The length for an adult will require to be six or seven inches, and three-quarters of an inch in circumference.

The mouth-cover B is in shape of a crescent, two inches apart, and one and a-half inch broad. There is an aperture in the centre G, through which the valve-pipe D passes; it moves backwards and forwards upon the valve-pipe by a slide X. The frame of the slide is circular, three-quarters of an inch in circumference, and is fixed to the central and posterior part of the mouth-cover. It moves through a ring H on each side, and lower part of the pump. The end of the slide forms a ring encompassing the pump, projecting two inches I.

There is a piece of glazed silk or bladder K, fastened to the short tube of the mouth-cover L, and about three inches from it, to the valve-pipe M, to prevent the air from escaping during the operation of inflating, and which allows the mouth-cover to be drawn sufficiently back for the introduction of the curved tube into the wind-pipe. Immediately behind M is the insertion of the elastic tube W; this tube is three feet long, and one inch in circumference.

At the end of the valve-pipe D is a screw N, in the section, half an inch long, which screws on to the pump. At the end of this screw is a valve O, to prevent the air from returning during its extraction from the lungs. The length of the valve-pipe is five inches; the circumference three-fourths of an inch. P is a stop for the screw N.

The exhausting pump is one foot long, nine inches circumference, and the bore two and a-half inches in diameter, (allowing for thickness;) and has consequently a capacity of nearly 58 cubic inches. The piston S, shaft T, and handle V, are altogether thirteen inches long. At the lower part is a screw Q, (in the section,) for the valve-pipe D. The piston has a valve O, to let the air escape when pumping.

In place of plugs for the nostrils, I prefer a spring instrument like figure Z.

Directions how to use the Resuscitator.

First, Shut the nostrils; *Second,* Introduce the curved tube A into the wind-pipe; *Third,* Hold the pump with the left hand, and the handle of piston with the right; *Fourth,* Put the end of the elastic tube into your mouth; *Fifth,* Push the mouth-cover forward, close upon the patient's mouth, with the fore-part of the hand which holds the pump upon the projecting ring I; *Sixth,* Inflate the lungs; *Seventh,* Extract the air with the exhausting-pump, by pulling the piston back.

While inflating, it is proper to have the piston close to the bottom of the pump, to prevent the valve O from rising, and allowing the air to escape. The operation is to be continued till life is restored, or the operator is satisfied that farther attempts at resuscitation are unavailing. The slide is to be occasionally drawn back to see if the patient breathes.

The instrument at present in use is clumsy, and the operation awkward and imperfect. Whilst the operator inflates, a second person keeps the mouth shut, and presses upon the chest to force the air out, which cannot be done sufficiently. A difficulty arises in keeping the air from escaping by the mouth when the tube is introduced into the windpipe by the mouth.

The advantages of the resuscitator are, the lungs are effectually inflated, and the air is completely prevented from escaping by the manner in which the mouth-cover is protected.

In place of having two or three persons to operate, only one is necessary. The air is easily and fully extracted by the exhausting-pump; the action of the lungs is constant, similar to that in natural breathing, and the warm air which proceeds from the operator's lungs into the patient's is a greater adjuvant in promoting resuscitation than the cold air from the bellows.

The operation is so simple that it can be understood and performed by any person.

Description of Plate.

A	The curved tube which goes into the windpipe.
B	The mouth-cover.
C	The elastic tube.
D	The valve-pipe.
E	The exhausting-pump.
F	The junction of the curved and valve-pipe, Fig. 4.
G	Aperture of the mouth-cover. Fig. 1.
H	Rings for the slide.
I	Projecting ring for the fore part of left hand.
K	Piece of bladder to cover the aperture of mouth-cover. Fig. 1 and 4.
L	Where the bladder is fastened to the small tubes of the mouth-cover. Fig. 4.
M	Where the bladder is fastened to the valve pipe. Fig. 4.
N	Screw of the valve-pipe. Fig. 2.
O	A valve.
P	Stop for the screw.
Q	Where the valve-pipe is screwed.
R	A valve, Fig. 3.
S	The Piston.
T	The shaft.
V	The handle.
W	Insertion of the elastic tube, 4.
X	The Slide.
Z	An instrument for compressing the nostrils.

Fig. 1. Is a perspective of the slide and mouth-cover.
— 2. Is the instrument separated.
— 3. A section.
— 4. A perspective.

Dysart, 10*th August* 1831.

Art. X.—*On a variety of Uterine Hemorrhagy not hitherto described.* By George Oakley Heming, Esq. Kentish Town, Member of the Royal College of Surgeons, London.

Two kinds of uterine hemorrhagy have hitherto occupied the attention of accoucheurs. The first is obvious to the patient or bystanders from being *external*, the blood flowing upon the bed-clothes; the second is generally recognized by its effect upon the countenance and on the action of the heart, in the form of syncope. It is then found on examination, that the blood flowing from the internal surface of the uterus has been retained by this organ, which is felt distended, and occupying a proportionate space in the hypogastrium. Both these cases, then, are ascertained clearly on examining the condition of the bed-clothes, or the region of the uterus. Both are alike described as attended by the almost entire absence of uterine pain.

The kind of uterine hemorrhagy which I am about to describe, differs from those in the absence of any material external appearance of hemorrhagy or of uterine tumour, and in the presence of uterine pains.

The patient is first seized with severe recurrent uterine pains, each of which produces a *slight* discharge of blood; she is unexpectedly taken with symptoms of the most alarming syncope; there is but little blood upon the sheets; the uterus is scarcely at all distended. On a careful examination, the uterus is found to contain but a small coagulum, and but a small quantity of blood is found externally, but in the space between the *os uteri* and the *os externum*, that is, in the space formed by the distended vagina, there is a coagulum of blood of the size of a child's head.

It is important that I should insist upon this occurrence of uterine pains, for they are usually considered to denote security from uterine hemorrhagy. Denman observes, "the accession of uterine pain immediately proclaims that the danger is passing or past." They, on the contrary, frequently afford only a distinctive mark of the kind of hemorrhagy I am describing.

Knowing the influence of terms, I would propose to distinguish these different kinds of uterine hemorrhagy thus; the first may be denominated *external*, the second *intra-uterine*, the one I have described, *intra-vaginal*.

Although, then, there be little external appearance of blood,—although there be little distension of the uterus,—although there be severe pains,—still if there be the appearance of syncope, we are to suspect a dangerous degree of hemorrhagy, and this we shall find to be of the kind which I have described.

The treatment consists in promptly introducing the hand, thus stimulating the uterus to contraction, and so to arrest the hemorrhagy, if this be proceeding at the time, and to induce the expulsion of the small coagulum contained within its cavity; and then in removing the whole of the coagulum from the vagina. The rest of the treatment consists in administering the usual remedies for alarming syncope, in applying cold to the region of the uterus, &c. and is not peculiar to the particular form of intra-vaginal hemorrhagy. I need not, therefore, enter upon points sufficiently discussed elsewhere.

Of the intra-vaginal hemorrhagy I have seen many cases. Of three of these I have retained notes, which I proceed to transcribe. The case is indeed not of an uncommon kind, but it is certainly undescribed in any of those books on midwifery usually put into the hands of students. This brief account of it cannot, therefore, be without its utility.

Mrs C—— had an easy and natural labour, and had been confined about an hour and a half when the midwife sent for me. I was summoned because she had pains after labour, more frequent, and much more severe, than the midwife had been accustomed to witness. These pains continued to come on at intervals of two or three minutes. I was told that there was not more discharge than is usual, but that a little came away at each pain. She was not pale; her pulse was good; in fact, she had no symptoms of having suffered from loss of blood. The uterus was contracted nearly as much as in ordinary cases, and I found, on placing the hand over the abdomen, that there was an effort of the uterus to contract still more at each pain.

I should have suspected at this time any thing rather than that the woman's life would have been brought into danger by hemorrhagy, so slow was the discharge, so strong were the efforts in the uterus to contract, and so unlike was the case to all others which I have ever seen or heard of. She at length grew pale, her pulse became weak, frequent, and almost imperceptible, and she fainted. I passed my hand into the uterus, although it was but little distended, and found a small coagulum. There was, however, a coagulum in the vagina of the magnitude of a child's head, and there was rather more blood than usual on the bed-clothes. Upon withdrawing my hand the pains ceased, and the hemorrhagy stopped. Cold vinegar and water were applied to the abdomen; but I now do not think it was necessary, for I believe the hemorrhagy was entirely stopped by removing the very small coagulum from the uterus, and the very large one from the vagina.

Two months after the occurrence of this case, I attended Mrs F———. Her labour was not at all protracted, and during it no unusual circumstance took place. She complained after the placenta had come away of pain coming on at intervals. She had experienced nothing of the kind in her two former labours at the same period. The pains continued to come on at intervals of a few minutes, and were so distressing that she cried out violently each time. She at length grew pale, and complained of giddiness and faintness; there was a little discharge with each pain. I put my hand upon the abdomen, and found the uterus contracted nearly as much as in ordinary cases. I could not, by feeling this organ through the parietes of the abdomen, at all suspect internal hæmorrhagy; and the blood which had been discharged externally, though greater in quantity than usual, was not sufficient to produce any alarm. I suspected this to be a case like the former, and introduced my hand into the uterus. There was in it a coagulum not very large, but one more than four times its size distended the vagina. When these were removed the pains entirely subsided, and with them the slight discharge which had accompanied them.

The faintness continued many hours, as the discharge of blood had amounted to a very considerable quantity.

The third case occurred in a near relative. Mrs ——, after a tolerably easy labour, and twenty minutes after the placenta had come away, was seized with violent pains coming on at intervals of five minutes, and accompanied with a slight discharge of blood, so very trifling, indeed, that it excited in the attendants no particular notice. She, however, at length became pale, and complained of faintness and giddiness. I put my hand upon the abdomen, and felt the uterus not more distended than usual. From the size of this organ I could have no suspicion of internal hemorrhagy. About seven or eight ounces of blood were poured out externally. Cold wet cloths were applied to the abdomen, but the pain continued, and the faintness increased. I introduced my hand and removed a very small coagulum from the uterus, and one five times the size from the vagina; and just at this time an additional quantity of fluid blood followed my hand. This produced absolute fainting, which continued eight or ten minutes. During the syncope the patient was slightly convulsed, and just after she had recovered became delirious, in which state she continued for eight or ten minutes. In about four hours from the commencement of the discharge, small doses of opium were taken, and a quiet night was passed. She was confined on Saturday evening, and on Sunday morning no complaint was made but of weakness and giddiness if the head was raised; the pulse was not more than 80, and the tongue clean. Monday was passed in the same manner, with the usual lochial discharge, and there was no complaint. She appeared in every other respect as well on the following morning, Tuesday. The pulse was not more than 80; the tongue clean; the skin cool; and there was no pain; there was a secretion in the breasts, and lochial discharge. As the bowels had not acted, it was thought right to give some castor oil. I saw her after it had acted twice, about three o'clock in the afternoon, when she said she was comfortable. In the evening, at nine o'clock, I again saw her; she had had violent shivering, and was very hot; there was beating in the head, and violent pain in the abdomen, with considerable tenderness; her pulse was 120, and her tongue much furred. Upon a slight view of this case, I certainly should have thought it one of peritonitis, and requiring blood-letting; but upon attentively considering its history, and comparing it with some similar cases related by Dr Marshall Hall, I made up my mind, that, whatever analogy there seemed to be between its symptoms and those of peritonitis, it was not inflammation. An opiate was given. In the morning, I heard my patient had slept occasionally; the tongue was becoming clean at its edges; the pulse was not more than 90; there was less heat of the skin; and no pain in the abdomen, but the tenderness continued, although in a less degree. A cold lotion was applied to the head, for there was still throbbing. In the evening my patient was still better, the tongue was cleaner, and there was less throbbing, and less tenderness. A little solid food was allowed, and the next day she appeared in all respects tolerably well. I have given this case much in detail, because it involves more practical points than the one it is intended chiefly to illustrate.

I conclude this communication by the subjoined letter from a friend, whom I had asked whether he had met with cases similar to those which I have detailed.

" *Highgate*, *May* 18, 1831.—DEAR SIR,—In compliance with your wish, I have sent a short sketch of two cases which have occurred during the last twelvemonths in my practice. I have to regret not being able to furnish you with more ample details, not having made any particular notes at the time of their occurrence.

" A. D., of a spare habit, about 30 years of age, was delivered by me of her second child, January 29, 1831, after a natural labour of ten hours duration. The placenta was detached half an hour afterwards, during the contraction of the uterus. Having administered an opiate, I left her shortly after going on well,—the uterus contracted, the pulse steady, and not more discharge than usual. I was, however, hastily summoned in two hours, and on my arrival found her in a very weak state, with a pale and anxious countenance, low pulse, and great restlessness, complaining of much pain in the lower part of the abdomen, with a sensation of weight; in fact, she had the symptoms which indicate great loss of blood. On examining the abdomen, the uterus was well contracted; but, on passing the hand into the vagina, (which was done very easily,) I found it considerably distended with clots of blood, which I instantly removed. The *os uteri* was nearly closed. The removal of the coagula produced immediate relief, the pain ceased, and having given her some brandy, and, as soon as it could be procured, beef-tea at short intervals, she rallied greatly before I left her. On looking over the clothes and napkins which received the discharges during and after labour, I discovered that there had been very little discharge externally. The clots, on being placed together, were about the size of a child's head at the time of birth.

"The second case presented very little variety from the first, excepting that I was called to the patient five hours after delivery. The uterus was contracted as in the former case. The same treatment was adopted with similar benefit. The woman, however, was not so debilitated, being of a more robust habit. Both cases have done extremely well.—Yours sincerely,

"N. T. Wetherell."

Art. XI.—*Case of peculiar Black Infiltration of the whole Lungs, resembling Melanosis.* By James Craufurd Gregory, M. D., F. R. S. E., Fellow of the Royal College of Physicians, and one of the Physicians to the Royal Infirmary of Edinburgh.

I AM induced to publish the following case, partly because I have not hitherto met with the record of any similar affection; and partly with a view of calling the attention of those practitioners who reside in the vicinity of the great coal mines, and who may have charge of the health of the miners, to the existence of a disease, to which that numerous class of the community would appear to be peculiarly exposed.

John Hogg, aged 59, was admitted into the Infirmary under my care, on the 29th of March 1831. He had gone through much service as a soldier, in America, in the West Indies, and in various parts of Europe, particularly in Spain during the Peninsular war; and had always enjoyed good health, although he had not, by his own account, been of very temperate habits, especially for the last ten or twelve years, during which period he had been employed in the coal-mines at Dalkeith.

About sixteen months before his admission, he first began to experience palpitations easily induced, with some dyspnœa and pain along the course of the sternum, which prevented him from following his occupation as a coal-miner. At the time of his admission, he complained, in addition to these symptoms, of severe cough, sometimes occurring in paroxysms, with dark coloured viscid mucous expectoration, which had existed for five months. His breathing was rather frequent; he lay with most ease on the right side, but generally preferred the erect position. He had slight œdema of the legs, and also of the under part of the arms, near the elbows. There was some distension of the abdomen, but without fluctuation. He reported his urine to be somewhat diminished in quantity, and frequently turbid. He had never complained of pain in his loins. His bowels were habitually costive; his tongue very foul; his pulse nearly natural; and his appetite good. The impulse of the heart's action was rather stronger, and felt over a somewhat greater extent of surface than natural, with a slightly increased sound. The respiratory murmur at that time was nowhere entirely absent, but was generally faint and bronchial, accompanied by pretty loud catarrhal *râles* on both sides of the chest, but chiefly, at that time, on the left side anteriorly.

As his pulse next day had risen in frequency, and was sharp and pretty full, twelve ounces of buffy blood were drawn from the arm, and a blister was applied to the sternum, with relief to all the symptoms. On the 4th of April, the cough, expectoration, and dyspnœa, had again increased, and prevented sleep. His pulse was 116, and the action of the heart still somewhat stronger than natural. The mucous and subcrepitating, or catarrhal *râles*, were now heard generally over the left side; but the respiratory murmur was still pretty well heard under the clavicle of that side. A loud mucous *râle*, amounting in some points to well-marked cavernous *râle*, was heard under the right clavicle, and over the anterior part of that side of the chest,—indicating the formation of cavities in the corresponding portion of that lung. Sixteen ounces of buffy blood were again drawn from the arm—another blister applied to the side, and afterwards leeches applied to the sternum, all with some relief. It is, however, needless to pursue the details of the treatment. He was put upon the use of various purgatives and diuretics with some effect; but the œdema, although for some time it did not increase, never entirely disappeared. The urine continued pretty copious for some time. I examined it frequently, and, although clear, I invariably found it to become hazy on the application of heat, while its density was lower than natural, varying at different times from 1014 to 1020. From the concurrence of these two signs, and from the number of similar cases I had previously met with, I felt no hesitation in announcing, that, along with the extensive disease of the lungs, and the slight organic disease of the heart, this man also laboured under a degree of that peculiar change of structure in the kidneys first described by Dr Bright.

Early in April the œdema extended to the scrotum and penis, and soon afterwards increased considerably in the legs and arms, while the urine diminished in quantity. The dyspnœa became more urgent, amounting at times to orthopnœa. The sputa became much more copious, and of a peculiar dark gray or nearly black colour, and his tongue acquired a coating of a similar appearance. His pulse became small, irregular in strength and frequency, and his extremities cold, notwithstanding the use of stimulants in considerable quantity. He was drowsy and slightly incoherent during the last two days, but only became comatose two hours before his death, which took place on the 18th of April.

On examination, both lungs, and particularly the right, were found to adhere strongly to the pleura costalis. The pleura pulmonalis of both lungs was much thickened; in some places, especially in the right lung, exhibiting a fibro-cartilaginous appearance and consistence, and about one-fourth of an inch in thickness. The pleura costalis corresponding to this portion of the pleura pulmonalis was ossified, and had caused bony union of several of the ribs.

When cut into, both lungs presented one uniform black carbonaceous colour, pervading every part of their substance. The right lung was much disorganized, and exhibited in its upper and middle lobes, several large irregular cavities, communicating with one another and traversed by numerous bands of pulmonary substance and vessels. These cavities contained a good deal of fluid, which, as well as the walls of the cavities, partook of the same black colour. A considerable portion of the pulmonary substance surrounding them was dense, hepatized, and friable. The rest of the lung was also somewhat condensed, and very œdematous. The serum, when expressed, was of the same black colour as the substance of the lung. The left lung did not appear to contain any cavities, but was condensed, and loaded with black serum. Some minute hard points could be felt in various parts of both lungs, but they did not differ at all in colour from the surrounding substance; and no distinct tubercular deposition or infiltration could be detected in those portions of the lungs which were most hepatized, even with the aid of the microscope. The texture in these parts appeared quite uniform, and the minute hard points felt in other parts rather conveyed the impression of their being merely the ends of small bronchial branches divided in making the section. The bronchial glands did not appear enlarged, but partook of the same black colour as the substance of the lungs.

There was some dilatation, along with slight hypertrophy of the left ventricle of the heart, and consequently some enlargement of the whole organ. The aortic valves were considerably thickened and corrugated, and although not much shortened, could not properly have performed their office. The mitral valve was also partially thickened and opaque.

Both kidneys were of a mottled colour, and lobulated externally, but not diminished in size. The natural fibrous structure of the cortical substance of both had given place in a great measure to the pale granular appearance characteristic of this peculiar disease of the kidneys, which was distinctly marked, and in some places had encroached considerably on the tubular portions. In other parts these appeared healthy and entire. The liver and spleen were very friable,—the liver somewhat granular in appearance. The other organs were healthy, and the black colour was entirely confined to the lungs and the bronchial glands.

The question here immediately presented itself, Whether this ought to be considered as a case of infiltration of the substance of the lungs by the peculiar matter of melanosis?—or whether the black colour of these organs depended merely upon the habitual inhalation of a quantity of the coal-dust with which the atmosphere of a coal-mine must be constantly charged, and which, remaining unabsorbed and acting as a foreign body, had led ultimately to disorganization of the pulmonary tissue?—in like manner as one form of phthisis is found to be particularly prevalent among those who by their occupations are most exposed to the inhalation of small irritating particles, such as stone-cutters, millers, and needle-grinders. In support of the first opinion, it might be urged that the lungs have been found more frequently than perhaps any other organ of the body the seat of true melanotic deposition, and that the principal symptoms in this case, the dyspnœa, the anasarca, and the general cachectic habit of body in a man advanced in life, without the progressive emaciation and hectic fever of true tubercular disorganisation, are precisely those which have been most frequently observed in melanosis affecting the lungs.

But there are various other circumstances which, in my opinion, render the second view much more probable. 1. I have not met with any recorded case, in which the melanotic matter was disseminated uniformly throughout the whole substance of both lungs. Haller, in his Pathological Observations, states that he had met with "a terrible species of phthisis in a man, who had one of the lobes of the lungs, (by which, I presume, he means one lung,) not indeed purulent, but full of putrid matter, as black as ink, of which he likewise found some quantity in the cavity of the thorax:"—and in none of the cases recorded by Bayle, Laennec, Messrs Cullen and Carsewell, or Mr Fawdington, was the black colour disseminated to a greater if even to so great an extent. 2. Melanosis is generally found in patches or masses, which are apparently encysted; and even when found infiltrated in the substance of the lungs, some traces of the deposition of black matter may generally be found in other parts of the body. 3. The colour of the lungs and the serum which they contained was in this case of a much deeper black than that of the true melanotic deposition, which usually contains an admixture of red, probably derived from the blood, giving it a brown or brownish black colour. 4. Laennec states, in accordance with the experiments of Dr Pearson,* that he had reason to believe that the black pulmonary matter sometimes found in such abundance in the lungs, especially in elderly people, (and which he considers as quite distinct from true melanotic matter,) proceeds in part at least from the inhalation of the smoke of lamps and combustible substances employed in domestic purposes; and I recollect to have heard him frequently say, that he had always found this matter most abundant in the lungs of those who had been obliged, by the nature of their occupations, to work at night and by lamp light. Were I to trust to my own experience on this point, I should say that it confirms the observation of Laennec. And, *lastly*, this man had enjoyed good health in various climates during the best part of his life, and he himself attributed the complaint of which he died to the air of the coal mines in which he had been working for so many years.

In order, if possible, to determine this point, the washings of the lungs, containing much of the black serum, were preserved for analysis. This, although rather a tedious process, was kindly undertaken by my colleague, Dr Christison, who has obtained the following results, which appear to me to go far to confirm the view I have ventured to take of this case, and are at least sufficient to establish the fact, that this black matter is widely different in its chemical composition from that of the ordinary matter of melanosis:

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* On the colouring matter of the black bronchial Glands, and of the black spots of the Lungs: Philosophical Transactions for 1813, Part II.

"1. Concentrated nitric acid boiled on it did not alter the colour.

"2. Immersion in a strong solution of chlorine had also no effect.

"3. A strong solution of caustic potass boiled on it took up some animal matter, and filtered very slowly. The first part which passed through was opaque and black; but the last portions were of a pale yellowish-brown colour, and transparent; so that none of the black matter was dissolved. The black matter remained on the filter, and this, well washed and dried, burned like charcoal powder, without swelling up, and with scarcely any animal empyreuma, leaving a considerable pale-gray ash.

"4. A small portion of the black powder left after the action of boiling nitric acid was well washed, dried, and introduced into a minute glass ball, with a tube attached, which was subsequently drawn out by means of the spirit-lamp flame to a fine bore. On the application of a low red heat to the ball, there was disengaged, at the open end of the tube, a considerable quantity of gas, which had the odour of coal-gas, and on the approach of a light, took fire and burned with a dense white flame. In the tube a dark yellow fluid likewise condensed, which had very exactly the odour of impure coal-tar naphtha, and became a soft mass on cooling, of the consistence of lard. This, when compressed between layers of filtering paper, yielded an oily stain to the paper, and left a white matter, which dissolved in boiling alcohol, and separated again on cooling, in the form of minute obscure crystals.

"In the products of this experiment, it is scarcely possible not to recognize the ordinary products of the distillation of coal. A gas of the same quality was procured, and likewise a naphthous fluid, holding in solution a crystalline principle, analogous to, if not identical with, naphthalin. I need scarcely add, that the quantity of material at my disposal, was too small to allow of a more extended inquiry into its nature."

A small portion of this black powder, and the lungs themselves, have been preserved.

August 1831.

ART. XII.—*Observations on Cholera,* in a Letter from HARRY LEAKE GIBBS, M. D. First Surgeon of the Naval Hospital, St Petersburgh.

OUR joys here are much damped by the cholera, which made its appearance at St Petersburg on the 14th of last month, and has since that time made rapid progress. It appears to be an affection of the nervous system of the stomach and intestines, the solar plexus being the point of sympathy. The aged, infirm, and those of broken constitutions, especially the ill-fed and habitual drinkers, are the victims. The heat has for these six weeks been great, with a want of rain, and the winds with scarcely any variation from the east, and with frequent gales from N. E. and E. S. E.; the trees are much blighted; and it is remarkable that since that period almost all have complained of a tendency to diarrhœa, in some cases profuse. Nearly all the cases of cholera may be traced to eating flatulent and crude vegetables, as cucumbers, melons, radishes, &c. of which the Russians are so fond; the use of ardent spirits, and afterwards drinking iced water, or quass, their common beverage, well iced, and this too during a state of perspiration. One of the Russian Fasts of a fortnight duration, during which times the lower classes (Mouzicks,) are very badly nourished, has just finished; and this too no doubt has aided the progress of the epidemic. I have heard many medical men insist on its non-contagious power, though the public authorities have judiciously acted as if it was contagious. Opinions on this point have widely differed; but now that this capital has fallen within the circuit it has been making for this last year and a-half in Russia, we have a right to be guided by our own experience, at least as regarding its effects here.

Pain in the head, lowness of spirits, want of muscular energy, pain more or less at the præcordia, with *tormina, borborygmi,* nausea, and excessive thirst, are the first symptoms. The contents of the stomach and lower intestines at the time of attack are speedily evacuated; vomiting and purging of a thin glairy watery fluid supervene; the pulse soon sinks; the extremities, tongue, and face, become cold and livid; and the eyes are considerably sunk in the orbits. Nearly from the commencement of the attack cramps and spasms of the arms, legs, &c. take place; and the spinal chord appears also to suffer. The convulsions of some before death are great; others die without a struggle; and many have retained their mental faculties to the last. On dissection, the vital organs, as the brain, the lungs, the heart and its vessels, and liver, are found gorged with blood; while the stomach and intestines are scarcely changed. There seems to be a suppression of the various secretions, which are thrown back on the system; and the blood appears to be suddenly determined to the inward parts, producing a high state of congestion.

Warm water given early affords relief, and if a bitter taste is produced (what is first vomited is sweetish,) a return of the bilious secretions may be looked for. Stimulants, frictions, the vapour and warm bath, preceded by cold ablution to produce more steady reaction, have been found useful in the earlier stage at the Naval Hospital. Sinapisms to the region of the stomach and abdomen, the course of the spine, and the inside of the legs and arms,—pediluvia, warm blankets, heated bricks, and whatever can be administered to restore the heat of the body and excite perspiration,—and likewise warm drinks of mint and elder-flower tea—have been liberally resorted to. With the intention of restoring the suppressed secretions stimulant diuretics have been freely used; and Hoffman's drops, with *Spir. Ammon. aromat. et Ol. Menthae, &c.* were given to allay nausea.

Venesection is found to be useful only at *the early stage*, and especially in robust and plethoric habits, before the pulse sinks. The patients in civil life are generally brought late to the hospitals appointed to receive them; not so with the military and seamen who are under the guidance of their superiors; and to this circumstance success with us at the Naval Hospital may be ascribed. The magistery of bismuth has been much used; but I cannot speak in its behalf in the very early stage. The acetate of morphia has been thought useful; but no regular plan has yet been laid down, owing to the difference of opinion. Small doses of calomel, with compound extract of colocynth (and aloes by some,) are given to induce a secretion of bile, and to rouse the chylopoietic organs when nausea has subsided. Our formula for the exhibition of calomel is two grains of calomel with a quarter of a grain of opium every other hour. Castor oil has been but seldom given. Whether the disease is altered by change of climate, or by having to contend with a different class of people, generally spirit-drinkers, certain it is, that the East Indian practice of venesection, to a large amount, with half scruple and scruple doses of calomel, does not do here.

Some have fallen into a low typhous state after recovering from the primary attack of cholera, and have been carried off. With some the symptoms have been so rapid, that in four, six, or eight hours death has followed; but often from twenty-four to thirty-six or forty-eight hours elapse before this event takes place, half or two-thirds of this time being passed at home without proper assistance. So much depends on the means and opinion of each medical practitioner, and there is such a variety of practice, that it is impossible to lay down any precise rules for acting. Having stated several facts, you will readily conceive what description of people are the most frequent subjects of this disease, and what means should be resorted to as prophylactic, as to diet, clothing, &c. In 90 cases in 100, the common victims are the irregular, the dissipated, those with broken constitutions and impaired health, the badly fed, the badly clothed, and those who indulge in intoxicating liquors or the excessive use of ices and iced liquors. I, for my part, have not been exempt from this derivation to the bowels and consequent tendency to diarrhœa. I have, therefore, avoided every thing indigestible, vegetables, especially in the raw state, as sallad, cucumbers, radishes, &c. &c. laitage, vegetables in soup even, and malt liquor, in lieu of which I add two table spoonsful of Cognac to a proper quantity of boiled water, and take a little port wine, with diluting drinks,—above all, keeping the body and feet warm, and avoiding cold liquids. The bile should be carried off by gentle purges if necessary, and the mind kept in a tranquil state; for the action of fear increases the tendency to diarrhœa, and predisposes to the disease, I am persuaded, especially amongst the weak and nervous. Many wear flannel over the abdomen. The night air and dew should be scrupulously avoided; and it is of great moment to sleep warmly covered.

Many bodies have been opened, and the appearances beforementioned have almost always been found. The medical men, and those concerned about the sick, have not been affected, and of this I know many instances in private houses; and I have every reason to think, with other medical men of my acquaintance, that it is an epidemic, not contagious, but acting in some other manner on the predisposition, habits, and constitution of the persons so predisposed. A patient of mine at the Naval Hospital, of a cachectic and scorbutic habit, (who a month ago was at death's door with a gangrenous ulcer of the leg,) and was in a convalescent state, was attacked with vomiting, purging, and cramp, early on the morning of the 26th ult. Notwithstanding the ready assistance that was afforded, he expired on the 4th day. From the great precaution used in avoiding communication, this man, who was confined to bed in the hospital, must have been affected, I think, by predisposition idiopathically; for he is the only instance of the kind I have had under my care in hospital, every one of my patients having escaped. As he lay in the ward at the time, and was attended by those of the ward, we might look for contagion to spread did it exist; but, thank God, all are well. He was of course moved into a different room after the attack for the sake of quiet; but the usual attendants waited on him. *If it is contagious*, it is so, in my opinion, *only in those* who have led irregular lives, are badly nourished, and of the constitutions I have before-mentioned, and who, consequently, have not sufficient energy, or *vis vitalis*, to withstand the action of the epidemic. What the peculiar *state* of the atmosphere producing this sickliness may be, any more than why the goods, as hemp, flax, hides, cotton, &c. contaminate the atmosphere on being unpacked, and by little and little influence the surrounding medium, I know not; nor do I believe it will be easily detected. I should add, that not only those concerned about the sick, as parents, nurses, and so forth, are not affected; but that no more danger arises from opening the bodies of those dead of cholera (as *we* have it) than under common circumstances.

How long the epidemic will run its course before it attains its acmé I cannot say. It generally increases for a month or six weeks, by which time many of the causes of its propagation I have mentioned will have disappeared. This was the case at Moscow and Riga. No doubt its duration is longer, the greater the number of inhabitants or persons susceptible of its action, and the more they are crowded together in low dwellings and confined air. Quarantines I think should be maintained; and we can do no harm by acting as if the disease were really contagious. May the deleterious air exist in goods that have been packed and confined, yet, as I have already said, without contagion existing in the human body, at least in such a shape as to affect others?

I forgot to say, that when venesection has been employed, the blood drawn is very black and thick, and such it appears at the necroscopic inspection in the great vessels; it is indeed sometimes almost of the consistence of tar, so completely is it carbonized. Venesection, therefore, may be of service in plethoric robust subjects, in the early stage, to lessen the mass of the circulation, acting mechanically, and thus affording the heart and arteries freer action, by stimulating them, and removing the plethora; for I look on it here as no question of inflammation. It is a question of life and death with the patient, before inflammation and its phenomena have time to take place. The time is too short, and the progress of the disease too rapid, for inflammation to exist in such a shape as to produce organic changes. I might say more; but I have not paper sufficient, luckily, to encroach longer on your patience.

St Petersburgh, July 1st, O. S.
13th July New Stile.

ART. XIII.—*Case of Inguinal and Popliteal Aneurism, cured by tying the external Iliac Artery.* By ALEXANDER EWING, M. D. Surgeon to the Royal Infirmary, and Lecturer on Surgery to the Universities of Aberdeen.

ROBERT PETRIE, 37 years of age, of a sallow complexion and general unhealthy appearance, was admitted into the Aberdeen Infirmary, on the 22d December 1830, with aneurism of the popliteal artery of the right side, which he said had been of several weeks duration. He had been a sailor since he was 15 years of age, and for 10 years had made voyages to the West Indies, where he had several very bad fevers, and narrowly escaped with his life. By the account of his friends he had also been much addicted to drinking spirits.

The tumour in the ham was large, and from the swelling of the integuments, appeared diffused, filling the space between the hamstring muscles, and extending upwards on the inside of the thigh, to near where the femoral artery pierces the triceps. The leg was swollen and a little red, particularly about the upper part. He complained of excruciating pain about the knee and down the outside of the leg, which prevented him from sleeping, particularly during the eight days previous to admission. He said the tumour was of seven weeks duration, and that he knew no cause for it, except that a week before observing it, he fell into the forecastle of a vessel, a height of about five feet, and at this time he felt a sharp pain in the ham.

When he first discovered the tumour it was about the size of a nut, and for a considerable time it pulsated more strongly than when he came to the Hospital. Pulse about 80; tongue a little furred; appetite impaired; bowels slow. On examining the thigh more particularly after admission, with a view to tying the femoral artery, another tumour was discovered in the situation of that vessel, just after emerging under Poupart's ligament. This was of the size of a walnut, and had not been noticed by the patient for more than a fortnight. By grasping it with the finger and thumb placed on opposite sides, it was felt to be strongly distended at each pulsation of the artery; and, by pressure on the external iliac above the crural arch, the pulsation ceased, and the tumour almost disappeared.

It appeared, therefore, that the patient had two aneurisms,—an inguinal and popliteal on the same side. As this seemed to indicate some predisposition in the vascular system, I examined the abdomen, chest, and pulse, in order to ascertain if there was any internal aneurism; but nothing of this kind could be detected. He informed me, however, that he had a rupture on the same side when young, and that it was cured by a bandage.

During the time he was in the Hospital previous to the operation, he only got opiates to allay pain and procure sleep, and occasional laxatives.

On consulting about the case it was agreed that the only chance which the man had was by tying the external iliac; although from his bad constitution, deteriorated by warm climates, former diseases, and intemperate habits, and the probable diseased state of the arteries, an operation did not hold out much prospect of success.

As my friend Mr Liston of Edinburgh happened to pass through the town at the time, he had the kindness to examine the case, and concurred in the opinion that the external iliac should be tied. I accordingly performed the operation on that day, (3d January 1831,) with the assistance of Mr Liston and my colleagues. The first incision commenced as high as the anterior and superior spinous process of the ilium, but an inch nearer the *linea alba*. This was carried down in a somewhat semi-lunar direction, and terminated a little above the external aperture of the inguinal canal. The tendon of the external oblique muscle was then divided on a director to the same extent, bringing into view the internal oblique. The struggles of the patient were very violent after this, and by forcing down the abdominal viscera, made it necessary to proceed with great caution. The next steps of the operation consisted in pinching up the muscular fibres of the internal-oblique with a dissecting forceps, and carefully dividing them in the direction of the external wound, and in the same way, some of the fibres of the transversalis. The *fascia transversalis* being then exposed, a few fibres of it were carefully scratched through with the knife, on the iliac side of the exit of the chord through the internal aperture of the inguinal canal. The peritonæum was then pushed upwards and inwards, bringing into view the external iliac, about an inch and a half above Poupart's ligament. The cellular tissue surrounding the artery and vein was next scratched through by a few touches of the knife on the upper surface of the artery, and a single ligature was then passed under it from within outwards, by the common aneurism-needle. A firm double knot was tied, and both ends of the ligature were left uncut and hanging from the wound. The pulsation in both aneurisms immediately ceased. It may be observed that no part of the artery was separated from its connexions, except in the tract of the needle. The operation was concluded by bringing the edges of the incision together by three stitches, some strips of adhesive plaster, a light compress, and putting a broad flannel roller round the loins and upper part of the thigh.

For an hour after the operation, the leg was quite cold and extremely painful. During this time external warmth was applied; but in the course of the evening the temperature rose about 2° higher than that of the opposite limb, and the pain at the same time diminished.

For the first two days he was troubled with sickness and vomiting, and slept little, but the pulse continued about 80. During this time he got castor oil to open his bowels, and saline effervescing draughts, with small doses of opium. His bowels were freely opened on the first day after the operation, but the sickness and retching continued. He was then allowed soda water to drink, which had the effect of settling his stomach. In a few days some inflammation appeared about the wound, and the stitches were cut out. This was followed by suppuration, but adhesion soon took place, except at a small spot round the ligature. No pulsation ever returned in the popliteal aneurism after the operation; but there was a slight pulsation in the one at the groin, which at the same time felt solid, as if filled with a coagulum. About a fortnight after the operation, this patient was accidentally exposed to the contagion of small-pox, by a boy who took it after coming to the Hospital. As Petrie had never been vaccinated, he was immediately ordered to be inoculated, and he went through the regular stages of cow-pox without any apparent bad effect on the wound or otherwise.

It is unnecessary to give details of the farther progress of the case, except to state that the patient's health continued good, and the aneurismal tumour in the ham gradually diminished. The wound healed up rapidly, but the ligature did not come away till the 7th March, probably in part from my unwillingness to use any force to pull it away, while the granulations firmly embraced it.

The patient, after sitting up for some time in the Hospital, walked home perfectly cured; and I saw him some days ago in good health.

Aberdeen, 12th June 1831.

PART II.

CRITICAL ANALYSIS.

Art. I.—1. *Treatise on Cholera Asphyxia, or Epidemic Cholera, as it appeared in Asia, and more recently in Europe.* By George Hamilton Bell, Fellow of the Royal College of Surgeons, Edinburgh, and late Residency Surgeon, Tanjore. Blackwood, Edinburgh, 1831. Pp. 150. 8vo.

2. *History of the Epidemic Spasmodic Cholera of Russia; including a Copious Account of the Disease which has prevailed in India, and which has travelled under that name, from Asia into Europe. Illustrated by numerous Official and other Documents, explanatory of the Nature, Treatment, and Prevention of the Malady.* By Bisset Hawkins, M. D. Fellow of the Royal College of Physicians, and Professor of Materia Medica and Therapeutics in King's College, London. Murray, London, 1831. Pp. 306. 8vo.

3. *Papers relative to the Disease called Cholera Spasmodica in India, now prevailing in the North of Europe.* Printed by Authority of the Lords of His Majesty's Most Honourable Privy Council. Winchester and Varnham. London, 1831. Pp. 38. 8vo.

SINCE drawing up the Analysis of the Russian Official Reports on Cholera, contained in the last number of this Journal, our attention has been unceasingly directed to the progress of the disease, and the various publications which have appeared on the subject. But the nature of the documents and information which have come to our knowledge are not such as to induce us to present the reader as yet with another detailed investigation of the several questions involved in them.

About the time our former analysis was written, satisfactory intelligence had reached this country of the disease having established itself at Warsaw about the middle of April last. Since then it has spread over the whole of Poland. Towards the middle or end of May it appeared at Polangen, Riga, and Dantzig, on the Baltic shore, and at the same time, crossing the south-eastern confines of Poland, broke out in several towns of Gallicia, particularly in Brody, Tarnopol, and Lemberg; then passed the Gallician frontier of Hungary, penetrating in this part of its course one of the Austrian Sanitary Lines; and, finally, according to the latest accounts, it had penetrated about the beginning of August another of the Austrian Lines, and appeared at various places within twenty English miles east from Vienna. While thus apparently spreading at the same time northward and southward on the meridian of Warsaw, it likewise succeeded in obtaining a footing at St Petersburg towards the end of June, and at Cronstadt and Archangel about ten days later. Thus, in spite of quarantine regulations and sanitary lines of troops, it has, in about a twelvemonth after its appearance at Astrachan, so completely pervaded the European dominions of Russia, that the government, about the beginning of August, withdrew entirely all quarantine restrictions,—there being no longer any material part of the empire to preserve. We shall not at present enter farther into the particulars of its progress, because the chief part of our information is derived merely from newspaper notices, which it would be absurd to transfer to our pages, when there is every reason to believe that more authentic records will be published ere long, embracing a narrative of all the remarkable visitations of the epidemic.

It is unnecessary to add, that all the governments of the European countries not yet visited have prudently taken early alarm, and adopted precautions for excluding it. In our own country, a Board of Health has been established in London; the quarantine laws are rigorously enforced, and quarantine stations and lazaretto-ships are to be seen at all the great sea-ports of the kingdom; medical men have been despatched to Russia to study the disease; and a praiseworthy alacrity has been shown on the part of our government to collect information from the best sources, and to exclude the terrible visitor by all measures which science can suggest. The French government has been not less active, and in particular has warmly supported the measures proposed by the scientific academies of Paris for acquiring an accurate knowledge of the nature, cause, and treatment of the disease.

We cannot say, however, that all this laudable activity has hitherto been followed by any commensurate results. Several reports of considerable interest have been recently supplied to the British government by Sir W. Crichton of St Petersburg, Dr Keir of Moscow, and Dr Walker of St Petersburg, the last of whom was employed by ministry to investigate the subject; several short notices have also been read before the Academy of Sciences and Academy of Medicine at Paris, containing observations by members of the French Medical Committee who were despatched to Warsaw; and the newspapers of Britain and France teem with suggestions, as to the propagation and treatment of the disease, by persons known and unknown, who speak, some from personal experience of the disease, others without any experience at all. But the general result of all that has been done since the publication of Dr Lichtenstädt's treatise is simply that no authentic facts of novelty or importance have been hitherto added to what was formerly known of the European epidemic. At least such well-authenticated facts as have appeared are merely counterparts of others previously made public, and will not assist us in coming to a decision on the several questions which in our last review were left unsettled,—more particularly on the chief question of interest, the mode in which the disease is propagated. For these reasons we shall be very brief in what we have now to say, and will confine ourselves in a great measure to a sketch of the contents of the works whose titles precede the present observations.

The treatise of Dr Hawkins, till a more methodical compilation be brought forward, will be found a useful treatise for those who have not leisure or opportunity to study the whole subject in the original works and periodical reviews in which it has been fully investigated. It consists of a collection of documents and extracts from documents, chiefly of an official nature, which have been published in various quarters since the disease first appeared in the British possessions in India; and thus embraces a judicious selection of facts on the progress of the epidemic, the precautions to be taken against its invasion and extension, the diagnosis, the causes or mode of propagation, and the treatment. In the body of the work the author first gives an account of the regulations alluded to in the last number of this Journal, as having been adopted by the Russian Medical Council to prevent the ingress and subsequent spread of cholera; then a statement of the preservative system recommended in India against an attack; next the official regulations of the Austrian Government for the purpose of repelling the approach of the disease, and controlling it in the event of its arrival; next the preservative effects of fumigations; and next, a description of the quarantine system in Russia. After this view of the medical police of the subject, he treats of the early history of cholera in India,—of the symptoms, morbid appearances, mortality, and treatment of the disease as it appeared in India, —of the symptoms, morbid appearances, mortality, and treatment of the disease as it appeared subsequently in Russia,—of the identity of these two epidemics, and the distinction between them and common cholera,—of the contagious nature of epidemic cholera, the circumstances which predispose to it, and the means of obviating them,—and, lastly, he winds up the body of his work with a narrative of the whole course of the epidemic since its first appearance in India in 1817, which department of the subject is illustrated by several instructive maps.

In an Appendix of 100 pages, are several very interesting documents, which we may here shortly enumerate, as giving a Sketch of the Bibliography of Cholera, so far as regards reports, letters, pamphlets, and such minor sources of information. 1. A brief view of the principal epidemics of Europe. 2. Substance of the report of the Supreme Medical Council of Russia. 3. Mortality from cholera in India from Mr Annesley's work. 4. Letter on the cholera of Moscow, from a physician there, published in a late number of this Journal. 5. Letter from Dr W. Ainslie on the treatment, one of the ten thousand "Letters" which have lately appeared in the Times and other newspapers. 6. and 7. Letters from Drs Reimann and Loder of St Petersburg to the Parisian academy. 8. Proclamation by the British government establishing a board of health. 9. Letter from the Medical Gazette on the treatment of Indian cholera by Cajeput oil. 10. Report of the Medical Board of Riga. 11. Report of the committee of health at Warsaw. 12. Account by Mr Cormick of the symptoms and treatment of the epidemic in Persia. 13. Remarks by Mr Herrmann of Moscow on the morbid changes of the fluids, &c. 14. On the Russian quarantine. 15. Dr Walker's Report to the British government on the Russian cholera. 16. Report of the London College of Physicians on the documents laid before them by government. 17. to 20. Extracts from manuscript reports to our army medical board by Mr Farrell, on the Ceylon epidemic, Dr Kinnis on the Mauritius epidemic, and the surgeons of the 89th, and 14th regiments on visitations of the Indian epidemic. 21. Circular of the Polish government respecting cholera. 22. Particulars of the death of Marshal Diebitsch. 23. Norwegian proclamation. 24. Report by the medical board of Moscow. 25. Report to the Prussian government by Dr Albers, sent officially to Moscow to investigate. 26. Account by Dr Keir on the morbid appearances in the Moscow epidemic. And, 27. A chronological table by Moreau de Jonnès of the progress of the epidemic, from its first appearance down to the present time, comprehending all the districts and towns in each country known to have been attacked, with the date of its appearance in each as nearly as can be ascertained.

The author deserves well of his brethren and the public for the diligence with which he has brought together and selected these documents, which on the whole will convey a correct impression of most of the particulars connected with the disease. In one respect, however, he seems to have selected with a bias: He has amassed all the facts and arguments which his sources of information could supply in favour of the doctrine of contagion, and has given far too little space, and we fear attaches far too little consequence to the not less important facts and arguments of those who believe from personal observation that it is not propagated in that manner. But on this and some other less material defects in the work it would be unreasonable to extend our strictures, as we feel satisfied that his present production,—consisting, as it does, in a mere selection of extracts from other works, with an attempt to connect them by links of his own composition,—is solely intended by him for the public benefit,—at least not to procure for himself literary or professional reputation.

The treatise of Mr Bell is quite different in nature. It is the work of a practitioner who has personally witnessed and treated the disease during his service as surgeon in the East India Company's Service; and its object is to try by his own experience what has been previously written on the various departments of the subject by his brethren of the East. In this point of view it is a valuable addition to the previous descriptions of the East Indian cholera by Scott, Jameson, Annesley, Kennedy, Christie, and other eastern practitioners.

In explaining his views he has followed the arrangement proposed by the Russian government in their late invitation to the profession to compete for a prize for the best dissertation on cholera. He originally intended to join the competition, but has very properly concluded that it is of more importance to give immediate publicity to the results of his inquiries. He accordingly gives first, a detailed account of the nature of the disease,—next, a statement of its causes,—then an inquiry into its mode of propagation, and more particularly into the question of the existence of contagion,—then, an indication of measures for self-preservation,—and lastly, a sketch of the most approved mode of treatment.

For reasons which need not be repeated, it is not our purpose to follow Mr Bell through his discussion of these several topics. But we shall state in a few words the points in which his views are important either from their novelty, or from the confirmation they furnish of the statements of former authors.

Mr Bell has exercised a good deal of ingenuity, and occupied a considerable proportion of his treatise, in endeavouring to establish a rational and consistent theory of the spasmodic cholera. He maintains, that it is impossible to regard it as primarily an affection either of the alimentary canal, or of the respiration, which some have imagined, or of the whole mucous surfaces, according to the doctrine of others, or as a disordered condition of the blood, which some of the later Indian authors have suggested. It is not an inflammatory affection of the stomach and intestines, because inflammation is seldom or never to be traced in the appearances after death. It does not consist fundamentally in depraved secretion from the stomach and intestines, because although such secretion is not only commonly present, but likewise in general one of the most striking circumstances in the disease, it is nevertheless not invariably present, and therefore not essential. Neither does the diease consist in depraved secretion from the whole mucous surfaces; for Mr Bell considers that in point of fact the whole secretions, those from the mucous surfaces as well as the secretion of tears, bile, urine, &c. are suspended, and that the peculiar evacuations from the stomach and bowels are not properly speaking secretions, but simply arise from exudation of the serous and fibrinous parts of the blood. Lastly, the disease does not consist fundamentally of a depraved state of the blood; because if such a state of the blood really existed, we certainly should not expect to find the functions of the sensorium continuing entire to the last, as is the fact in the generality of cases. Mr Bell, after making these exceptions to the theories hitherto proposed, concludes with his own; which is to the effect, that the ganglionic or sympathetic system of nerves governs the circulation and various secreting functions, and that a disordered state of this part of the nervous system is the fundamental cause of epidemic cholera. We cannot afford space for a sketch of the line of argument by which the author has developed and supported this theory. It sets out with an assumption at the very commencement,—the appropriation of the ganglionic system of nerves to maintain circulation and secretion,—a doctrine which, for the sake of perfecting the physiology of the nervous system and of the ganglionic part of it particularly, it must be confessed we should be very willing to see established, but of which we are not acquainted with any substantial proofs yet in existence, or at least any evidence beyond plausible presumption. But allowing the author to assume this first step in his investigation, it must be granted that his theory of spasmodic cholera flows from it easily, naturally, and logically.

In regard to Mr Bell's views of the nature of the disease, it need scarcely be added, after the preceding exposition of the theoretical part of the inquiry, that he joins in opinion with those who maintain that it is a disorder totally distinct from ordinary cholera. Ordinary cholera, the cholera morbus of nosographists, is a local affection of the alimentary canal, and the constitutional symptoms are the sympathetic effects of this affection. Epidemic or spasmodic cholera is a disease of the nervous system, of which the affection of the alimentary canal is but one of an extensive set or series of symptoms. Such is Mr Bell's doctrine, and it differs but little from that of his predecessors among the practitioners of the East Indies, which has been adopted with trivial variations by almost all the Russian practitioners of any note who have come in contact with the disease, and likewise latterly by the Board of Health lately appointed by our ministry. As the promulgation and general adoption of this doctrine is calculated to do good practically, by turning the attention of practitioners to the necessity of treating epidemic cholera in a very different manner from common cholera, we shall not now meddle with it. But we conceive it may, on a future occasion, be no difficult matter to prove, that there is a want of a sound and comprehensive understanding of the general pathology of the stomach and intestines, in the supposition that the phenomena of epidemic cholera cannot be accounted for, on the assumption that a peculiar affection of the alimentary canal is the primary disorder. In the phenomena of the more violent cases of common cholera, as it now prevails in Britain, and in the phenomena of the action of some poisons, whose operation is confined to producing a violent impression on the alimentary canal, many analogies may be found to support this statement.

Perhaps the most satisfactory part of Mr Bell's treatise is the article on the Treatment. We have nowhere, indeed, seen it more clearly, fully, and simply explained. In common with other practitioners who had occasion to treat the disease in the East Indies, he considers blood-letting the principal remedy. He recommends that it be had recourse to in the most unpromising circumstances, as he has known its employment successful in cases where the individuals appeared almost at the point of death; and he agrees with all his predecessors who have recommended this measure, that "in no case in which it has been possible to persevere in blood-letting until the blood flows freely from the veins, and its colour is recovered, and the oppressed chest is relieved, will the patient die from that attack of the disease."—

P. 105. He directs, that when the blood has once begun to flow, it is to be allowed to escape till these changes be observed. The ordinary rule for the use of venesection in acute diseases, namely, to continue till syncope come on, is here inapplicable, as it is extremely difficult to induce fainting in patients affected with cholera. Its effects he considers to be purely mechanical: it relieves the congestion of the blood in the great veins and lungs, and partly on this account, partly by the mere diminution of the mass to be moved, enables the circulation to go on.

At the same time that the practitioner is withdrawing blood, he must resort to proper means for maintaining the temperature by external warmth, and for stimulating the system by the use of opium, ether, camphor, ammonia, brandy, calomel, or some of the other remedies which have been variously relied on for the purpose. External heat, he informs us, is best applied in the dry way, as the skin, on account of the great reduction of its temperature, cannot endure the rapid communication of heat by the warm bath. He has given simple directions for applying dry heat, for which we must refer the reader to his Treatise. Among the internal remedies, those on which he relied in his own practice were opium, camphor, calomel, and brandy,—all of which were usually administered in the progress of each case. He objects warmly to the practice generally adopted in India of prescribing these articles in inordinate doses, and maintains, we believe, with great justice, that some individuals whose cholera was checked by them, died nevertheless in consequence of the poisonous operation of the drugs, which by the sudden cessation of the discharges had accumulated in too great quantity within the body. His method was to administer, so long as the vomiting was violent, three grains of calomel, two of camphor, and half a grain of opium, in the form of pill, every half hour,—the pill being washed down with a little brandy and water. After the vomiting was a little subdued, he substituted a draught of an ounce of camphor julep, with half a drachm of ether and ten drops of laudanum, which was administered every fifteen minutes or every half hour, according to the urgency of the case.

These, according to our author, are the leading objects to be kept in view in the treatment of the early stage of cholera; and they will always be found successful, if they have the effect of restoring the radial pulse, the temperature of the skin, the natural colour of the face and nails, and, in particular, the secretion of urine. But if, notwithstanding every effort, arterial action remains imperceptible, the coldness of the body continues or increases, a cold clammy perspiration breaks out, and jactitation ensues, there is little reason to hope for a favourable termination.

The remaining indications to be fulfilled in the treatment are to guard against local congestion,—to ward off reaction,—and to produce a healthy condition of the bowels. Congestion, after the primary stage, or stage of collapse is over, is most apt to occur in the liver and lungs, but sometimes also in the head; and moderate blood-letting is its surest remedy. Reaction he very seldom witnessed; but a state like general fever sometimes did ensue, marked especially by determination to the head; and this was combated chiefly by topical abstraction of blood. The restoration of the healthy condition of the bowels, where it did not follow the employment of the remedies used in the early stage of the disease, he found most easily accomplished by a combination of a scruple dose of calomel, with brisk purgatives administered soon afterwards. When by one or two applications of this practice the stools have become feculent, the patient may be pronounced safe; and tonic remedies, with a generous diet and regulated exercise, must be gradually resorted to, in order to confirm his convalescence and prevent relapse.

We shall conclude what we have to say of the present work with a few remarks on his opinion and experience relative to the supposed propagation of the disease by contagion. In our review of the Russian official documents we entered fully into the question of its origin in contagion. And we conceive that on a calm and impartial retrospect of all that has been written on the subject, the philosophical physician must arrive at the following conclusions, 1. That the disease often arises and spreads independently of a power of propagating itself by communication from man to man; 2. That in some circumstances it appears destitute of the power of so propagating itself by communication; and 3. That at the same time strong presumptive evidence has been adduced of its occasionally acquiring such a property. Mr Bell is an uncompromising anticontagionist, and possibly will not give a willing assent to the last of these propositions; and we are not surprised at this. There undoubtedly appears no reason to suspect that the disease acquired a contagious character in the East Indies; and in medicine it is but human nature to place reliance on one's own personal experience.

For our own part, while we are by no means prepared to say that the occasionally contagious nature of epidemic cholera has been proved to our satisfaction, we would deprecate the assumption in the present stage of the inquiry of a decided opinion to the contrary. We repeat that, looking to the *Russian* experience of the epidemic no sensible physician can, in our opinion, make up his mind on either side of the question. The penetration of numerous sanitary lines of troops in Russia, Austria, and Prussia, is an additional argument in support of the opinion we have already advocated, as to the possibility of the disease spreading independently of contagion. The sudden leap of the epidemic from the centre of Russia to Warsaw, together with the long rest it appears to have taken after reaching the longitude of that city, and the correspondence of these events with the military movements of the Russians and Poles, and with the limit of territory comprehended in these movements,—constitute a confirmation by no means unimportant of the views of those who believe that in Russia its progress has been aided, if not altogether accomplished, by contagion. Minor facts have also appeared in various channels of communication, more especially in the journals of Britain, France, and Germany,—some of them favourable, others hostile to the doctrine of contagion. These it would be preposterous to notice at present. Some of the facts must be false, because many are quite contradictory; and it is out of the power of a calm and distant observer to subject their authenticity to any test. We must therefore wait patiently for more accurate investigations, which will be made, it is hoped, by competent judges ere long, now that the pestilence has fairly obtained a footing in civilized Europe, and in a country whose men of science have long been celebrated for their accuracy and diligence in the observation of facts.

While in the act of concluding the preceding sketch, we have received the first circular of the London Board of Health, entitled "Papers relative to the disease called *Cholera Spasmodica* in India, now prevailing in the North of Europe." The object of this document, is to make medical people, magistrates, and the public at large, acquainted with the character and treatment of the disease, so that it may be recognized at once and properly combated should it unfortunately obtain entrance into these islands. The papers are, 1. A summary of the symptomatology and morbid anatomy of the disease and of the treatment pursued in India. 2. Part of a report to the British government by a Scotch physician, Dr Keir of Moscow, giving an account of the symptoms and appearances on dissection of the epidemic of that city. 3. Part of a report to the British government by Drs Russell and Barry, giving a description of the symptoms of the epidemic as they have witnessed it at St Petersburg. 4. Preliminary steps advised by the London Board to be taken on the first appearance of the epidemic in any part of Britain.

As we have scarcely any doubt that this document will soon be in the hands of every practitioner in Britain, we need not occupy the space of this Journal at present by any lengthened commentary on it. One or two observations, however, are called for in regard to certain additions made in it to the history of the disease.

Several of the Indian reports make mention of an occasional affection observed in Hindostan to follow the stage of collapse, and partaking in a great measure of the characters of general fever of the typhoid type. This affection is particularly dwelt on in the Bengal Report; but it was not common, and the author of the Report, Mr Jameson, considered it doubtful whether it was an integral part of the disease or merely a form of the ordinary bilious fevers of the country. Dr Keir, in his report on the Moscow epidemic, takes notice of the same disorder as having been not unfrequent there as a stage of reaction following the stage of collapse, and attended with great danger. Drs Russell and Barry describe it as extremely frequent in the St Petersburg epidemic, so that they have no hesitation in saying that the disease has in some measure changed its character in travelling from Hindostan to the Baltic. After describing the worst form of cases, which in St Petersburg, as in India, prove fatal during the early stage or collapse, they go on to say, that where this stage is recovered from, the patient seldom enters at once into the stage of convalescence, as usually happened in India, but on the contrary has to pass through a consecutive fever of the typhoid type. This fever is represented by them in the following terms.

" After the blue cold has lasted from twelve to twenty-four, seldom to forty-eight hours or upwards, the pulse and external heat begin gradually to return, headach is complained of, with noise in the ears, the tongue becomes more loaded, redder at the tip and edges, and also drier. High-coloured urine is passed with pain and in small quantities, the pupil is often dilated, soreness is felt on pressure over the liver, stomach, and belly. Bleeding by the lancet or leeches is required. Ice to the head gives great relief. In short, the patient is now labouring under a continued fever, not to be distinguished from ordinary fever. A profuse critical perspiration may come on, from the second or third day, and leave the sufferer convalescent; but much more frequently the quickness of pulse and heat of skin continue, the tongue becomes brown and parched, the eyes are suffused and drowsy, there is a dull flush, with stupor and heaviness about the countenance, much resembling typhus, dark sordes collect about the lips and teeth; sometimes the patient is pale, squalid, and low, with the pulse and heat above natural, but with the typhous stupor; delirium supervenes, and death takes place from the fourth to the eighth day, or even later,—in the very individual too whom the most assiduous attention had barely saved in the first or cold stage. To give a notion of the importance and danger of cholera fever, a most intelligent physician, Dr Reimer, of the Merchant Hospital, informs us, that of twenty cases treated under his own eye, who fell victims to the disease, seven died in the cold stage, and thirteen in the consecutive fever.

"This singular malady is only cognizable *with certainty* during its blue or cold period. After reaction has been established, it cannot be distinguished from an ordinary continued fever, except by the shortness and fatality of its course. The greenish or dark and highly bilious discharges produced in the hot stage by calomel are not sufficiently diagnostic, and it is curious that the persons employed about these typhoid cases, when they are attacked, are never seized with ordinary fever, but with a genuine cold, blue cholera. Nothing therefore is more certain than that persons may come to the coast of England apparently labouring under common feverish indisposition, who really and truly are suffering under cholera in the second stage."—P. 32.

The extract from the report of our countryman, Dr Keir of Moscow, supplies the first complete account we have seen of the morbid appearances observed in the Russian epidemic, and we shall therefore transcribe it here *verbatim*, requesting the reader to compare Dr Keir's description with that given of the appearances in the Indian cholera by the Report of the Madras Presidency, and extracted in this Journal, xxiv. 200.

"The appearances in the dead bodies were not uniform, and varied according to the duration of the disease, and the circumstances under which the patient had died. As this was the case, I conceive the most satisfactory way by which I can answer the inquiry on this head, will be to transmit the printed accounts of the dissections made at Moscow, and presented to the medical council there by its members, who occupied themselves the most with this part of the duty; while I here add the impression made on my own mind by the dissections at which I was present.

"The extremities were in general more or less livid and contracted, and the skin of the hands and feet corrugated, the features sunk and ghastly; on opening the skull the blood-vessels of the brain and its membranes were more or less turgid with blood, particularly towards the base; the arachnoid had sometimes, in several places, lost its transparency, and adhered to the pia mater; a fluid was sometimes found effused in the convolutions of the brain in some quantity, and more or less of serum in the lateral ventricles. The blood-vessels of the vertebral column and spinal chord were more or less loaded with blood, which was sometimes effused between its arachnoid and dura mater. Partial softening of the substance of the spinal chord was sometimes met with, and marks of inflammatory? congestion in the larger nerves. The lungs were generally gorged with dark-coloured blood, the cavities of the heart filled with the same, and frequently containing polypous concretions. In all the dissections I was present at, very dark-coloured blood, which, when extended on a white surface, resembled the colour of the darkest cherry, was found in the arch of the aorta, and in other arteries.

"The state of the abdominal organs varied considerably. The stomach and different parts of the intestines were frequently found to be partially, but considerably contracted: the internal surface of the stomach sometimes seemed to be little affected. A whitish or yellowish fluid matter, resembling the evacuations, was frequently found in different parts of the alimentary canal, which now and then contained a good deal of air. In either case, both stomach and intestines bore marks of congestion, and of a sub-inflammatory state, varying from dark-coloured spots of small extent to several inches, affecting the whole internal circumference of the intestines. The colour of these parts also varied a good deal, from dark-coloured venous congestion to rose-coloured inflammation. In one case the internal surface of the stomach was so strongly and so generally tinged of a very dark colour, that it might easily have been mistaken for gangrene. On exposing the stomach between the eye and the light, it was evident that there was neither gangrene nor solution of continuity, but that the dark colour proceeded from a very general and great congestion of a very dark-coloured blood in the vessels of the organ. The subject of this case, I was told, had died with symptoms of a typhoid nature, after suffering from the usual symptoms of the epidemic. Excepting in this case, which was evidently one of congestion, and not of inflammation, I saw nothing in the morbid appearances from which a conclusion could be drawn, that inflammation was a very general morbid change in the alimentary canal, or a common cause of death: However, by its presence in the second period of the disease, it might add to the general irritation, or, even as a consequence of preceding congestion, be itself occasionally the cause of the fatal event. Both stomach and bowels were occasionally of a paler colour than natural, both on the outer and inner surface; but neither thickening nor condensation from inflammation, nor exulceration, destruction of substance, nor abscess, appeared in any of the dissections I was present at.

"The liver was generally pretty full of dark-coloured blood; the gall-bladder frequently much distended with tenacious, ropy bile, of a dark-yellow or green colour; the gall-ducts sometimes contracted, at other times not; the appearance of the pancreas, spleen, and kidneys was various, frequently differing but little from their natural state, in other cases rather surcharged with blood; the urinary bladder almost always collapsed and empty; the uterus generally natural."

The last part of the Report of the London Board to which we shall advert is the concluding sentence, where, after stating the preliminary measures to be adopted in any district of the country in which the disease may appear, it is added, that, "in the event of so great a calamity falling upon this country as the introduction of this disease, rules and regulations upon an extensive scale, suited to the rigid system of quarantine which such an event would demand, will be immediately circulated by the Lords of his Majesty's most Honourable Privy

Council, who will, on the earliest intimation of the existence of the disease, send down a medical practitioner, who has been acquainted with the disease as it occurred in India."

On this announcement we have one or two remarks to make, and then we shall dismiss the subject for the present. The London Board, if the above intimation mean any thing at all, appears to contemplate the rigorous enforcement of quarantine by sanitary cordons, whenever the disease appears in Britain. In reference to this proposition, we beg to suggest the following queries, which we shall be happy to find satisfactorily answered. In the first place, what substantial benefit has been derived from the rigorous quarantine and sanitary cordons established on the Continent? Have they appeared to moderate, for it is plain they have not prevented, the progress of the epidemic in any single unequivocal instance? Have they attained any object worth the immense expence and most serious interruption of trade, commerce, and general intercourse which they necessarily involve? Secondly, granting the system of quarantine and cordons has proved beneficial on the continent of Europe, what chance is there of such a system being faithfully and effectually enforced in this land of liberty? If the command of an almost unlimited military force has proved insufficient in despotic Russia, and in Austria and Prussia, whose governments are scarcely less strong-handed, is it possible to institute an internal quarantine of the slightest value, in a country where the whole disposable troops amount to a few thousands, and the police, even if its authority were sufficient, (which assuredly it is not,) is barely extensive enough for the ordinary purposes of municipal government. Thirdly and lastly, granting we had the means of enforcing an exact internal quarantine, is there sufficient evidence to warrant its institution as a means of checking the epidemic? Is the Medical Board satisfied,—for certainly we are not,—that the best means of checking its progress is not, on the contrary, to disperse the population, wherever it is crowded, over the adjoining country on the first alarm? We have stated on a late occasion, that this plan was followed at Tiflis, the capital of Georgia. The result on the surrounding country ought undoubtedly to be considered as an *experimentum crucis* on the question of contagion. *Has the London Medical Board taken any pains to learn what that result was?*

We may add, that the Board ought to be aware of the existence in Edinburgh and other parts of Scotland of practitioners of reputation who have personally witnessed epidemic cholera in the East, and therefore ought not to subject the country to the expence and inconvenience, as was done on a late occasion, and is threatened by them again,—of despatching a physician from

London to this quarter to investigate rumours of the appearance of the disorder.

Art. II.—*A Practical Dissertation on the Waters of Leamington Spa; including the History of the Springs, a new Analysis of their Gaseous and Solid Contents, the Rules for drinking the Waters, bathing, &c.* By Charles Loudon, M. D. Physician at Leamington. Third Edition. Fairfax, Leamington. Baldwin and Cradock, London, 1831. Pp. 90. 8vo.

We hope ere long to see respectable modern monographs on all the mineral waters of this country. On a late occasion, we gave a short account of one of the best yet published, that of Dr Hunter on the mineral springs of Harrowgate; and we have now to recommend to the reader's notice, another of perhaps equal value, devoted to the description of a watering-place, which has more recently become fashionable, but is already scarcely less celebrated or resorted to.

Leamington has been long known to possess mineral springs; but it is only within the last twenty-five years that it has become a place of resort. Till the year 1784 only one spring was known, called the Earl of Aylesford's, a saline spring, containing 105 grains of salts in the imperial pint. In that year a new saline spring was discovered, of nearly the same strength; and in 1790 a third of the same nature and strength was sunk in the town, and its water carefully analysed by Dr Lambe, then of Warwick. The publication of this analysis was the means of attracting increased attention to Leamington as a watering-place; and its attractions were still farther enhanced in 1804, by a fourth saline spring of inferior strength being discovered, on which occasion the various establishments for visitors throughout the town were much increased. In 1806, much substantial importance was added to Leamington as a watering-place by the discovery of a sulphureous spring, which was followed by that of two others of the same nature not long afterwards. And finally in 1819 this town was found to unite within itself the waters of all the mineral springs of the kingdom by the farther discovery of a chalybeate spring of great strength.

Besides thus combining the possession of springs for almost every possible denomination of patient, Leamington enjoys many advantages of not less consequence. The town being of modern formation, is regularly and commodiously built; the hotels and lodging-houses are of the very best order; the surrounding country is rich, varied, and easily accessible; the roads are excellent and the soil of so sandy a quality that in a very short time after a fall of rain the invalid may venture out on foot with perfect safety; its climate is of course that of an inland district, free therefore from sudden gusts or violent gales; its situation at a distance from mountains renders it temperate and not subject to sudden rains or deluges; and lastly, it is most conveniently placed at a moderate distance from several large towns, for in ten hours the inhabitant of Leamington may travel to London, in three to Birmingham, and in one to Coventry.

The author has given the analysis of eleven waters, which all possess more or less celebrity and are made use of by visitors. For these analyses he expresses his obligations to Dr Daubeny, Professor of Chemistry at Oxford, and the Regius Professor of Chemistry of "our alma mater",—Cambridge we imagine, though the reader is left in the dark on this point. We may here, as in our review of Dr Hunter's work, present a tabular view of the analyses as given by Dr Loudon,—premising that, besides the salts we mention, Dr Daubeny found in all the springs he examined a small quantity of iodine, amounting to a twelfth of a grain in the imperial pint, and likewise a trace of bromine. The names of the springs are, 1. Lord Aylesford's; 2. Smith's; 3. Wise's; 4. Robbins'; 5. Reid's Sulphureous; 6. Reid's Saline; 7. Imperial Fount Chalybeate; 8. Imperial Fount Saline; 9. Imperial Fount Sulphureous; 10. Royal Sulphureous; and 11. Pump-room Saline.

	Cubic inches of gas.					Chlorides of					
	Ox.	Az.	Carb. acid.	Sulph. hydr.	Sulph. soda.	Sodium.	Calc.	Magn.	Silica.	Ox. iron.	Total.
1.	.07	.54	2.10		40.40	40.77	20.56	3.27		trace	105.09
2.	.04	.66	2.50		40.23	47.86	19.77	2.12		do.	109.99
3.	.09	.49	2.18		39.46	26.61	18.74	22.59		do.	107.40
4.	.07	.56	2.36		28.62	35.35	23.51	8.47		do.	95.95
5.	.02	.42	3.16	1.14	28.06	25.60	15.78	9.69		do.	79.14
6.	.02	.56	2.16		30.61	42.92	17 99	10.81	0.97	0.26	103.57
7.	.07	.64	3.29		34.29	55.27	25.06	8 93	8.58	8.58	135.71
8.	.10	.76	3.16		34.43	14.53	17.57	26.05		trace	92.59
9.	,01	.61	3.53	1.14	31.11	7.30	39.30	19.49	3.62	0.53	101.36
10.	.06	.50	3.16	1.14	5.55	5.14	3.36	1.16		trace	15.21
11.	.07	.59	2.45		32.74	67.78	20.90	12.36	1.04	0.95	135.79

A remarkable circumstance pointed out by this table is that the chalybeates of Leamington differ from all other chalybeates hitherto carefully examined in the oxide of iron being united with silica.

Dr Loudon, in the remaining part of his treatise, has laid down, apparently with great care, a number of simple instructions for the guidance of those who visit Leamington and use the waters. These we shall not attempt here to communicate, because granting we could do so effectually, we might thereby turn the reader's attention more to this review than to the original work, which is far from being our purpose in the present notice.

We may draw, however the following sketch of what he has said of the diseases in which the several waters have appeared to him beneficial; because it will then be seen that he is not one of the tribe of watering-place-physicians, who find the mineral springs of their residence a remedy for all maladies under the sun; and is therefore entitled to credit for the virtues which he does ascribe to them.

The water of the Saline springs he says sometimes bring on nausea, headach, flushings of the face, distension of the stomach, and other disagreeable symptoms, which are to be corrected by remedies calculated to improve the deranged state of the alimentary canal which is commonly found to exist when such effects result. When the water acts in a salutary manner, it either excites the kidneys, or acts on the bowels. The diseases in which it has been found useful are the various forms of dyspepsia, hæmorrhois when arising from irregularity of the bowels in connexion with dyspepsia, the chronic stage of gout and rheumatism, and struma in its various forms, but more especially enlargement of the glands of the neck or the mesenteric glands. Externally it has proved useful in chronic ophthalmia, old ulcers, and various obstinate eruptions. Its supposed antilithic virtue is all imaginary, as also the effect it is believed by some to possess of dispersing white swelling of the joints and curing the different states of spine disease. The immoderate use of the saline waters induces feverishness and languor, sometimes hæmorrhoids, and at times troublesome and obstinate diarrhœa.

The Sulphureous water produces in some people unpleasant feelings in the stomach, dryness of the tongue and fauces, and headach. When it agrees, it produces no particular immediate effect. It is very generally used in combination with the saline water. This mixture is much taken by dyspeptics, and still more for derangements of the spleen and liver, especially in persons who have lived a life of indulgence or passed many years in hot climates. The sulphureous water is also much used when convalescence from measles or small-pox is slow,—in the debility consequent on the liberal use of mercury,—and in hypochondriasis and the other effects of visceral torpor induced by a sedentary life. In *acne rosacea* and *acne punctata* this water is injurious, and in large doses it is hurtful to old people of a leucophlegmatic habit.

The Chalybeate water produces in some people giddiness, pain across the forehead, shivering, sickness, flatus and the like; but these unpleasant effects may be counteracted by the addition of diffusible stimulants. When its action is salutary, it produces either diuresis, or slight movement of the bowels, succeeded by a feeling of increased alertness. Sometimes it causes constipation, however, notwithstanding the large proportion of saline matters united with the iron; and it is usual to correct this tendency by combining with it occasional laxatives or the pure saline waters. The diseases in which the chalybeate waters have chiefly been resorted to at Leamington are cachectic disorders generally, chlorosis, dysmenorrhœa, amenorrhœa, and other uterine affections. Dr Loudon considers they are injurious in scirrhus, in pulmonary disorders, in plethoric habits generally, but particularly in constitutions prone to affections allied in their nature to apoplexy, in hemoptysis, and in hæmorrhois. In all varieties of asthma, cough, and consumption, chalybeates he considers decidedly injurious; but perhaps this opinion is delivered rather too unreservedly.

The author's observations on the mode of using the waters and on the diseases for which they are employed, are followed by some judicious remarks on the various modes of applying them in the form of baths.

On the whole, we repeat that the present treatise appears to us a valuable addition to the literature of this department of medicine, and that it will be found an excellent guide both for practitioners, and for the pubilc in making use either of the waters of Leamington, or of those of other springs of an analogous nature. We may therefore recommend it particularly to the attention of our professional readers.

Art. III.—*Medico-Chirurgical Notes and Illustrations.* Part I. I. *On some dangerous Affections of the Throat which induce sudden Death by Suffocation.* II. *On Strictures of the Œsophagus and the dangers of the Bougie.* III. *On the Cure of the falling down of the Bowel in grown persons.* IV. *Chronic abscess of the cheek from the irritation of a carious Tooth.* V. *Anomalies in Rupture Operations.* VI. *On Failures in Lithotomy.* VII. *Dilatation or Aneurism of the Posterior Aural Artery.* VIII. *On a Chronic encysted Tumour near the Testes.* IX. *Inflammation of the Testes, followed by suspicious circumstances.* X. *Imperforate Vagina.* By R. Fletcher, Esq. Surgeon to the General Infirmary at Gloucester, and Consulting Surgeon to the Asylum for the Reception of Lunatics, near Gloucester. London, 1831. 4to. Pp. 146.

We have ever been disposed to receive in the most favourable manner those desultory records of medical or surgical practice, which convey lessons which no systematic instructions can teach, which trace the small and unexpected phenomena of disease, the accidents contingent on various operations, the effects, it may be, of rashly or ignorantly applied measures; and the manifold hairbreadth escapes which happen alike to patient and practitioner in the administration of remedies, the performance of operations, or the management of subsequent treatment.

There is, it must be admitted, something extremely mortifying and by no means agreeable in the perusal of works like that before us. When the student, we do not say of what description, thinks, after hearing lectures by able teachers, and reading discussions by able writers on all the most puzzling, and therefore the most investigated, subjects in surgery, that he has formed a clear conception of all the difficulties, and understands perfectly the means by which they are to be obviated;—when he fancies, in short, with the warm enthusiasm of an ambitious mind, anxious to distinguish himself in something useful and meritorious, that he is perfectly prepared to manage the treatment of such diseases as *laryngitis*, œsophageal stricture, prolapse of the rectum, hernia, stone in the bladder, &c. and that he is perfectly competent to perform all the requisite operations, some Mr Fletcher appears, and, with a long detail of hopeless and distressing cases, dispels the illusion, and shows the unhappy reader that all his imagined knowledge is scarcely adequate to conceal his ignorance, and that his confidence is nothing but presumptuous rashness. From such a study he rises with a painful feeling of the inadequacy of all instruction and all preparation, however elaborate; and the natural result is, that he begins to doubt whether instructions are of any use whatever, and whether there be any possibility of establishing general rules on any topic in practical surgery. The question in this case is, should feelings thus produced be indulged? Are these unpropitious results sufficiently numerous and important to demand special attention in the performance of operations, and in the management of after-treatment? Are they, or are they not, necessarily connected with the practice of surgery? Are they mere exceptions from general rules, to which no attention should be given, or do they constitute a sufficiently important class of circumstances to claim particular attention, and to require the provision of means to obviate their occurrence, or counteract their effects?

That such anomalies and irregularities occur, the daily practice of surgery abundantly demonstrates; and that they are either wholly omitted, or receive a very slight and transient degree of attention in systematic treatises, arises from the fact that it is quite impossible, in such treatises, to comprehend all the little deviations from general rules. It is further perhaps no good policy. The student, if introduced at once to all those conflicting circumstances, which indicate and contraindicate operations, would be absolutely bewildered amidst the chaotic and discordant assemblage, and would, in ninety-nine cases in a hundred, be disposed either to abandon the study in disgust, or, thinking there was no need of general principles in a study so abundant in particulars, would be in danger of discarding them entirely, and of placing all his confidence in a blind and fool-hardy species of empiricism. The only way, therefore, in which this painful but valuable species of information can be acquired, is by subsequently studying these anomalies as they occur in practice, or in the experience of such authors as the present. It is not the practice of every surgeon that affords opportunities for the acquisition of this species of knowledge; for it must not only be an extensive, but in some respects a peculiar sphere of observation and experience to furnish them. There is further something not altogether pleasant in describing unsuccessful cases; and it requires much self-denial in a surgeon to publish his own; while it is not every author that can be trusted in narrating the mishaps of others. On all these accounts, the records of unsuccessful cases are not so numerous as the interest of surgery requires; and the art is much indebted to every surgeon who undertakes, either from his own experience, or from his own sphere of observation, to supply the defect.

Such records are doubtless often mortifying, because they frequently contradict not science indeed, but what our limited views imagine science ought to be, and render abortive all these fine drawn speculations which the mere study of general principles in systematic treatises tends to suggest. But they are of unrivalled utility, by showing not only the fallacy of those prematurely established general principles, but the unexpected and unknown circumstances which have led to the results; and the knowledge of which on future occasions may teach the method, if not of avoiding them entirely, at least of counteracting their influence. Such records are direct means of enlarging our knowledge of the native powers of the animal economy, and consequently of augmenting the number of our means of relief. Not only do they teach us those evils which ought to be avoided, but they demonstrate in the most impressive manner the means which we must employ if we wish to avoid them; and teach all those minute and delicate peculiarites of management, as well as great general measures which can be learnt in no other mode than by being long and habitually conversant with the varied contingencies of extensive practice. We shall take a brief view of the subjects discussed by Mr Fletcher nearly in the order in which he considers them.

Spasm of the Glottis.—The existence of spasm of the *glottis*,—that is of an affection of the muscles, independent of inflammation or ulceration of the membrane or submucous tissue, or diseases of the cartilages,—has been wholly denied by some persons; and, within certain, limits this idea is perfectly correct. Without defining it expressly, Mr Fletcher simply compares it to the spasm of the urethra, in which the urine is entirely suppressed, and represents it as an involuntary and irregular contraction of the muscles of the *glottis*, causing temporary stricture of that aperture. He virtually allows it to be a secondary affection, resulting from the presence and irritation of some other disease of the throat or larynx, of which Mr Fletcher specifies the following list; acute inflammation of the pharyngeal mucous membrane, (*cynanche tonsillaris*,) acute inflammation of the laryngeal or tracheal membrane, (*cynanche laryngea* and *trachealis*,) bronchocele, handling or leeching a bronchocele, ulcer of the œsophagus, abscess of the pharynx, abscess of the neck, abscess of the *fauces*, venereal ulcer of the throat, enlargement of the tonsils, and elongation of the *uvula*. From this enumeration it is evident that the affection termed by the present author *spasm of the glottis*, is in no respect different from that which has been always understood as such, and that it designates that contraction of the muscles which always takes place when any irritation is applied to the laryngeal membrane or its vicinity, such as to threaten the admission of any bodies, solid, fluid, or aerial, which may interfere with the healthy performance of the process of respiration.

This contraction, however, is altogether a vital one, not mechanical, and consequently ceases the moment life is extinct; and it hence results, that we have not of its presence the same proof as we have of other mechanical impediments to respiration. This, however, Mr Fletcher contends, is the best evidence of the nature of the affection which can be given; for, since we know, he argues, that the *glottis* is surrounded by muscles capable of violent convulsive actions on the application of irritants, and which may close the tube long enough to extinguish life, it may be justly inferred, that when no mechanical impediment is recognized on inspection after death, the true cause of obstruction existed in the spasmodic contraction of the muscles during life.

> "The spasmodic stricture of the glottis," he continues, "varies in degree and duration. The highest degree must prove quickly fatal, no air being able to gain a passage through the *rima glottidis*, as we sometimes see in the spasmodic stricture of the urethra, which

will scarcely allow a drop of urine to pass beyond it. At other times the degree of spasm is moderate, and will last a considerable time, frequently observed in slight convulsive catches of the breath, alternating and connected with more regular difficulty of breathing, produced in some cases by pressure on the larynx, and diseases within that canal."—P. 2.

Nor does this view of the pathology of the affection suggest any other than the usual treatment in such circumstances; that, namely, which is directed to the removal of the primary cause of the stricture, and if this fail, to the removal of the effects by an artificial opening into the windpipe.

"The treatment of the spasmodic stricture of the *glottis*," says the author, "consists in the speedy removal of its cause. If this is not done with decision and rapidity, bronchotomy becomes necessary."

In cases of spasm from inflammation of any of the other contiguous parts, the proper remedies are general and local depletion, especially by leeches applied to the neck, and every part of the antiphlogistic regimen, excepting exposure to cold air. When suppuration threatens, an early outlet of the matter is the most likely means of averting any disagreeable consequences; and in one case of *cynanche tonsillaris*, Mr Fletcher probably saved the life of his patient by puncturing the right tonsil, and evacuating the matter.

In the performance of this operation, Mr Fletcher very properly cautions the operator against plunging his instrument into the carotid artery. Though the occurrence is not common, yet the circumstance of its having happened in more than one instance, as recorded by Portal, and the anatomical fact, that the internal carotid may be so near the tonsil as to be in the way of the instrument when impelled too much towards the outer side and the angle of the jaw, are sufficient reasons for impressing the surgeon with a hint as to the direction of his instrument, and the depth to which it may be allowed to penetrate.

In the case of chronic enlargement, the cure consists in reremoving the enlarged tonsil by ligature; in the execution of which Mr Fletcher modifies the method of Mr Chevalier, by causing an assistant to seize the tonsil by a double hook, and drawing it diagonally across the mouth, so as to elongate its base, and allow the noose to be carried as far up as possible. In some instances this tumour may be removed by a pair of curved scissors, the tumour being previously drawn forwards a little by means of a hook.

The elongated *uvula* is more a nervous, or at least a dyspeptic, than an inflammatory or organic affection, and should in general be treated by gastric or stomachic remedies. Mr Fletcher proposed, in one instance, to amputate its extremity, but the patient would not consent; and in this, we believe, he acted wisely: for the disease was removed by improving the state of the stomach, and by the local use of powerful astringents. In some instances it is useful to touch the extremity of the *uvula* freely with nitrate of silver, or apply to it the powder of alum. There is, however, an affection of the *uvula* which occurs in leucophlegmatic and dropsical subjects, and which consists in the body being infiltrated with serous fluid. In this variety of the elongated *uvula*, astringents, though of some benefit, are much less useful than in the ordinary gastric elongations; and it is only after the serous fluid is removed, and the vessels have sufficient power to resist the gravitating tendency of their contents, that the complaint begins to disappear.

The least manageable forms of this disease are those connected with abscess or ulcer of the pharynx or larynx; because in these the surgeon has less accurate information on the exact locality of the mischief, amd because, though he may suspect, he cannot in all cases be certain of the existence of an abscess or ulcer; and the result is, that a patient, who to-day has only the general and local symptoms of an affection of the throat, idiopathic, strumous or venereal, may to-morrow be suddenly suffocated before the surgeon can reach him. This took place in three cases recorded by Mr Fletcher; in one from deep chronic abscess of the pharynx, which at once compressed the œsophagus and the larynx; in another from ulcer of the œsophagus, about an inch below the situation of the cricoid cartilage; and in the third from the irritation given the glottis by a sloughy venereal ulcer at the back of the pharynx, which had spread on each side to the larynx, yet without affecting the *rima glottidis*. For these forms of disease, the author suggests no other means of cure save what bronchotomy presents.

Stricture of the œsophagus, Mr Fletcher distinguishes into two species; one consisting in a puckering of the mucous membrane, similar to that observed in the urethral mucous membrane, with little contiguous thickening, and forming a transverse fold of the membrane, leaving an aperture in the centre, or at the side only; the other of a dense cartilaginous thickening of the coats encroaching uniformly on the calibre of the tube. The first, which is a merely *membranous* stricture, and in general the result of inflammation, is capable nevertheless of resisting the bougie, and giving its point a wrong direction, especially if the fold cross the canal diagonally, when the point of the bougie is liable to be forced against the side of the œsophagus, and even through its coats. The second form is one of the varieties distinguished as scirrhus, although Mr Fletcher admits that he has never seen it traversed by membranous *septa*, nor has he observed it to be conjoined with ulceration. In all probability it is merely induration dependent on chronic inflammation of the œsophageal mucous membrane. But whatever be its nature, Mr Fletcher thinks it the duty of the surgeon to make his way through it, so as to open a passage between the throat and stomach. It is much rarer than the membranous, which Mr Fletcher allows to be by no means common.

As the only rule of practice for the treatment of these affections is the introduction of the bougie, Mr Fletcher's principal object is to caution the surgeon against the unnecessary, the careless, the rash, and the improper use of this instrument. "Nothing is more common," he says, "in hospitals, than to see the pupils passing bougies down the throats of patients who are reported to have strictures of the œsophagus. The instrument passes easily; and the physician or surgeon takes credit for the discovery and cure of a disease which never existed. These are spasmodic affections of the tube, which sympathise with a disordered stomach. They yield to a slight pressure of a bougie, and do not all resemble the stubborn permanent obstruction, which is of comparatively rare occurrence."

This, however, which is chiefly the officious and unnecessary employment of the bougie, is not entitled to the tithe of the censure which attaches to the careless and injurious employment. To demonstrate how much injury may result from the necessary use of this instrument when introduced without the proper precautions, Mr Fletcher gives two cases in which it took a wrong direction, and formed a false passage, which caused the death of the patient. In the first of these cases, which occurred in the person of a maiden lady of 60, the stricture, as was proved by dissection, consisted of a membranous fold, stretched diagonally across the œsophagus, and rendering the canal nearly impervious. When Mr Fletcher first saw this case, he introduced a small sized instrument with difficulty beyond the site of the cricoid cartilage, and not until he turned its point considerably to the left, when it appeared to grate over a rough surface. Mr Fletcher afterwards passed the same instrument twice, after which it was introduced by the family-surgeon at the residence of the patient. Soon after she complained of pain and constriction deep in the neck, and this was followed by suppuration of two lymphatic glands; while, at the same time, a bougie of only the size of the first one could be introduced with difficulty. About a month after, when a good deal of fetid matter was brought up, more room was felt at the point of the bougie than formerly; but the attempt to swallow was invariably followed by coughing, with retching, during which considerable quantities of fetid mucous and purulent matter were brought up. Death, which appears to have followed in a few days, showed an opening in the anterior wall of the gullet, forming a communication between that tube and the windpipe. The mucous membrane of the latter was much reddened, and its cavity was filled with mucus and morsels of food intermingled. It cannot be doubted, that the communication thus established between the gullet and windpipe, by producing not only frequent approaches to *asphyxia*, but by creating inflammation in the tube, and filling it with mucus, was the efficient cause of the fatal event.

This inference is still more forcibly confirmed by the second case related by the present author. In a patient, who had stricture of the *œsophagus* opposite the cricoid cartilage, which was so complete as to resist altogether the passage of the bougie, the armed bougie had been used so often, and so freely, as to induce extensive inflammation and thickening of the part; and neither solid food nor fluid could pass the obstruction. The surgeon attempted to carry a stiffened elastic gum bougie through it; and he imagined with success. The next day, however, the throat was very much swollen; a large abscess followed; and the patient died of the joint effects of irritation and inanition. Inspection disclosed a lacerated breach in the lower part of the pharynx, occasioned by the forcible penetration of the bougie.

A case of cartilaginous stricture is adduced to show the possibility of feeding a patient till some dilation is effected. In a man of 60, of rather intemperate habits, Mr Fletcher, after several times introducing with great difficulty a bougie about the size of his little finger, at length found the point of the instrument resisted, and entirely reflected by the firmness of the stricture. The armed bougie was then used without success; then an elastic tube and ivory-balled probangs, and all without passing the stricture. He had then recourse to a urethra metallic tube, which he succeeded in carrying through the stricture, with the effect of temporarily restoring deglutition. Exposure to cold, however, was followed by inflammation of the throat and gullet, and all the former obstruction; and though these symptoms were mitigated by local bleeding, and the patient was fed for several days by Weiss's pump with the tube, death took place in the act of vomiting in the course of the third night. Dissection disclosed a thick, hard, whitish, cartilaginous ring, occupying a considerable portion of the circle of the œsophagus. It was, however, free from ulceration; nor did a section of this new structure exhibit the membranous *septa* supposed to distinguish scirrhous stricture.

In short, while Mr Fletcher is desirous to impress on the surgeon the rule, that it is his duty not to relinquish a patient with stricture of the œsophagus, without making every fair attempt to re-establish the communication between the mouth and the stomach, he is most anxious to point out the precautions which he should observe, and the dangers which he should avoid, in order to effect this purpose with safety. With these views, he condemns all pointed instruments, abuses the armed bougie, and, above all, condemns the use of much force, and of stiff instruments which require force for their introduction. He admits, nevertheless, that stricture of the œsophagus can be treated in no other mode, and on no other principle, than that of dilatation or destruction; and all medical treatment he regards as useless.

"It is now thirty-two years since I entered the wards of the Gloucester Infirmary as a pupil. It is a large hospital. But such is the rarity of real or permanent obstructions of the gullet, that in hospital and private practice combined, I cannot satisfactorily make out a list of more than fourteen cases which occurred during the whole of this long period. The majority of these were treated medically; they perished. Others were treated with the pointed bougie, simple or armed. I fear this treatment was equally unsuccessful. Where opportunities occurred, in these last cases of inspection after death, false passages or openings through the substance of the tube were generally discovered, which either killed the patient outright, or accelerated his fate."

To obviate and avoid these evils, Mr Fletcher proposes a metallic instrument, like a sound incurvated to the curvature of the throat, and consisting of three rods, which conjoined are sufficiently small to pass through any stricture with certainty. The extremity of this sound is formed by a moveable ball of steel, which, on the turning of the handle, separates the sound into its three constituent rods, and, ascending between them, enlarges their calibre to a considerable extent. The advantage of this instrument is, that it acts not by the extremity, but by the sides or rods, which, when separated by the steel ball, necessarily distend and dilate the strictured portion of the canal. It is possible that it may even lacerate the stricture; and to this Mr Fletcher appears to have no objection. It may be doubted, nevertheless, whether, if this ought to be done at all, it might not be more safely effected by a few slight scratches by a cutting edge, much in the same manner as Mr Stafford practises with the urethral stricture.

The notes on *prolapsus* of the rectum, though containing several good illustrations of that disease, present nothing particularly novel. Mr Fletcher condemns with some severity, and, we think, not undeservedly, the rash practice of applying a ligature to any part of the bowel. There is no doubt that the surgeon who has recourse to such a proceeding can never be quite sure that it will not be followed by inflammation; and if this extends, he has a reasonable prospect of feeling that he has been guilty of homicide. Mr Fletcher, therefore, to avoid any feeling of this description, adopts the method by excision practised by Mr Hey, but dissuades the surgeon from removing deeply and roughly, as is occasionally done, any of the small blue tumours, which are distinctly formed by the bowel itself. Skin and cellular tissue he has no scruple to remove; but with the texture of the bowel he is averse to interfere; and this, he maintains, may always be effected by dissecting the skin deliberately from the bowel, and returning the latter tenderly and carefully. These precautions are at once necessary and judicious; and much suffering and hazard might be prevented, if they were made the subject of more frequent attention among surgeons.

In some instances prolapse is combined with, and apparently caused by, stricture; and Mr Fletcher, who has met with several examples of this combination, which had resisted treatment under others, yet yielded under treatment directed to the stricture, recommends the surgeon, in every case of the former disease, to ascertain by examination whether it is combined with the latter. The persevering use of the bougie removes the stricture and the prolapse at the same time. The cases detailed by Mr Fletcher afford excellent illustrations of the efficacy of this mode of treatment; and show how much mischief may be averted by the seasonable and efficient use of the instrument. In some instances severe dyspeptic symptoms, a long train of nervous complaints, and a languid and enfeebled state of the system, were maintained by the presence of stricture of the bowel; and while all the usual tribe of purgative, tonic, and stomachic remedies were employed, not only in vain, but evidently with the effect of aggravating the symptoms, a course of the bougie put every thing in its right train.

From the fourth note, on chronic abscess of the cheek, induced by the irritation of a carious tooth, which requires merely to be mentioned, we pass on to the fifth, on

Anomalies in Strangulated Hernia encountered in operation. The first anomaly is an *enterocele;* the sac of which was contained within the sac of an *epiplocele*, while behind this double tumour was a *cystocele*. The loose portions of omentum were cut away; and a good recovery was made. But so large was the opening occasioned by this hernial tumour, that the upper portion of the bladder, when distended, uniformly passed through it.

The second anomaly is a case of strangulated femoral *enterocele*, inclosed so completely and so firmly by omentum as to be constricted by that, and by that alone. The femoral ligament was divided without relieving the stricture, and the parts were left in the wound unreturned. As might have been anticipated, the symptoms of strangulation were unabated; and next day, as a last resource, an incision was made into the bowel, on the idea, that, by relieving the bowel of its contents, all was done that could be effected. The symptoms of strangulation disappeared, and the patient recovered with an artificial anus; but died twelve months after the operation from an unknown cause. The remedy employed in this case was only a choice of evils; and it seems more consonant to reason and the circumstances of the case, to have attempted to detach the omentum from the bowel, and ascertain whether such detachment would not have removed the constriction, than by thrusting a pointed instrument into the bowel, produce one of those disgusting evils, the occurrence of which it is the great object of the operation for strangulated hernia to prevent.

The third anomaly consisted in a case of omental scrotal hernia, being combined with a portion of omentum which was strangulated in a ring of its own substance, with firm adhesions uniting it above to the omentum. These were divided or torn, and some parts were removed by the knife. The tumour, however, was still so large that it could not be returned into the abdomen, and the greater part of the omentum was therefore removed. Notwithstanding a good deal of abdominal pain and general fever, recovery took place; the testicle was felt *behind*, not *before* the tumour; and the vessels of the spermatic chord were so much enlarged as to give them the appearance of intestine.

In the fourth anomaly, the only remarkable circumstance is, that in a young man who had a reducible scrotal tumour on the left side, the abdominal inflammation resulting from the kick of a horse on the belly rendered it irreducible, apparently by causing the effusion of lymph, and forming adhesions round its neck.

In the fifth anomalous case, a man of about 50, in consequence of a fall, in which his watch was forcibly struck against the lower extremity of the inguinal canal, was attacked by the usual symptoms of strangulated hernia. Mr Fletcher supposes that the fall had produced the hernial protrusion, while the impulse of the watch had simultaneously contused the protruded parts. It seems not unlikely that the individual had hernia previously, though of too small a size to attract attention. At all events, the operation was performed; and in its course the intestine, which was closely adherent to the sac, was punctured. Death took place on the fourth day after the operation. No inspection appears to have taken place; and as the iliac symptoms disappeared as the contents of the bowels escaped from the wound, Mr Fletcher infers that he died from exhaustion. This conclusion appears to us not quite legitimate; and notwithstanding the disappearance of inflammatory symptoms, we think it fair to infer that the injury done the intestine partly in the fall and partly in the operation, may have caused death.

The sixth case is remarkable only for the circumstance of the spermatic chord and testicle having been mistaken for the vermiform process of the cæcum in the first operation, and a second operation having been performed to reduce the hernia completely.

The subject of the sixth note is *Failures* in Lithotomy.

It is impossible to question the truth of the observation made by Mr Fletcher, that " the history of failures is perhaps more valuable than that of successful cases. Dissection will trace the causes of death with the errors committed, and point out how in future they can be avoided, so as to lead to more precision and certainty of a successful operation."

One of the best established points in the history of lithotomic operations is that, all other circumstances of diseased bladder, diseased prostate, diseased kidney, or diseased lungs, being excluded, the most frequent cause of unfavourable result is such a bulk of stone as to require great and unusual violence in extraction. Hence the necessity of that primary and indispensable rule, to make a good opening into the bladder, and, if the division of the left side of the prostate be inadequate, to divide also the right side more or less extensively. To the application of this rule, however, there are limits. The physical possibility of the lateral operation consists in two elements,—the anatomical width of the interval between the two pubo-ischial *rami*, and the degree of stretching which the textures forming the neck of the bladder can safely undergo after such division of the prostate as may not implicate the pelvic part of the bladder and the rectum. It is easy to see that stones of a certain size only can admit of this mode of extraction, and that only when they are grasped by the shortest or most favourable diameter. When the diameter of a stone exceeds two inches, it must be extracted with great difficulty, and sometimes with extreme danger. The large stone which was found in the bladder of Sir Walter Ogilvie, * for example, and that recorded in this Journal, Vol. xxix. p. 221, by Dr John King of Irvine, the smallest diameter of which was three inches, could by no possibility have been extracted by the lateral operation; and even much smaller concretions than this it would be impossible to extract without such injury to the parts as must render the operation only a different mode of inducing death.

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* Phil. Trans. for 1809, p. 303.

From inspecting the statement of sizes of the stones extracted by the late Mr Martineau of Norwich, Mr Fletcher infers that the forceps is the great agent of destruction. In the practice of that surgeon, among eighty-four stones two only weighed four ounces, and of these one case proved fatal; and from this Mr Fletcher infers, that most of the *calculi* were so small as not to require much force with the forceps. Without inquiring minutely into the particular legitimacy of this inference, we believe it may be safely laid down as a well established point, that wherever a stone is so large as not to be extracted easily by the ordinary division of the prostate, the chance of injury is very great, and the chance of recovery greatly diminished. To obviate the evils resulting from this cause, Mr Fletcher properly recommends the stone-breaking instrument of Mr Earle.

To show that these evils are not imaginary, Mr Fletcher gives the details of several highly interesting cases in which, from various causes, too much freedom, if not violence, was employed in the use of the forceps. He gives, for instance, an account of the first case in which he performed the operation of lithotomy. The subject was a healthy man, of as unbroken constitution as the age of 60 can allow. But there were several reasons for believing that the concretion was of unusual size; and preparations were made by using a large sized gorget, and by providing the stone-breaker. The operation was fairly and ably performed, and the stone was seized; but the difficulty was to drag it through the aperture. With the finger in the rectum, to ascertain the bulk of the stone, the incision was enlarged by the bistoury. The operator requested the stone-breaker; but another surgeon dissuaded him, and urged him a first and a second time to use the forceps, with the encouraging argument that he himself had used ten times more force. By one effort more a mulberry culculus weighing five ounces and a quarter was extracted, after the patient had been on the table three quarters of an hour. The patient bore with difficulty the shock of the operation; and he died on the fifth week after. Inspection disclosed a large abscess in the cellular membrane between the bladder and rectum, and the edges of the prostate gland and neck of the bladder in tattered fragments, covered with purulent matter,—effects which Mr Fletcher with some justice ascribes to the violence inflicted by the forceps.

In a second case, in which Mr Fletcher operated on a young man of 22, without any organic disease, and who therefore ought to have recovered, Mr Fletcher ascribes the unfavourable event to imperfect division of the perinæal muscles, and the use of a narrow gorget, which failed to divide the right side of the prostate sufficiently. Though these errors, which Mr Fletcher attributes to the want of physical and mental energy, which overpowers a man when he is unwell, were in some degree rectified, and the stone was extracted without much force, yet death took place five days after, in consequence of peritonæal inflammation. The size of the stone, which weighed four ounces, must in this case have had some share in the fatal issue. Inspection showed laceration of the left division of the right lobe of the prostate, proving the inadequacy of the wound made by the gorget on that side. The intestinal folds were united by coagulable lymph. Mr Fletcher recommends, from personal experience in this case, that no man should operate unless he feels himself in that state of alacrity which depends on perfect health.

Of a third case, though not by Mr Fletcher, the result was still more painful. A healthy middle-aged man, of unusual moral energy, and in excellent spirits, underwent the lateral operation with firmness and alacrity. The operator, indeed, by accuracy of incisions, entered the bladder at once, and introduced an immense pair of forceps, which, after some difficulty, grasped the stone, but with such a separation of the handles, as showed that the stone was either very large, or was held by its largest axis. "A great deal of force was immediately applied, and that not in the best direction, but to no purpose; the stone would not pass. The operator rested, the patient was calm and complained not. The labours of the former now recommenced with redoubled vigour, and an air which imported a dreadful determination to succeed. His right foot was placed in preparation for this awful struggle against a chair, which was supported by a pupil; the scene became animated though horrible. The straining and creaking of the forceps, as they occasionally lifted the suffering wretch from the table, (they twice pulled him off it,) his wild agonizing shrieks and entreaties for forbearance, after continuing nearly two hours, gradually became more faint, and sunk at last into a piteous moan; and when the stone was shown him, it was doubtful whether he saw it, or was even conscious that a period had at length arrived to his sufferings. He expired a few minutes after being carried to bed. The body was not examined." The stone exceeded five ounces in weight.

Mr Fletcher was of opinion on examining the gorget, which was small, that it could not have completely divided the left lobe of the prostate, and as it cut on one side only, the right lobe must have been altogether untouched. This case, we must be further allowed to say, is one which proves to demonstration the pernicious nature of the gorget as a cystotomic instrument. Had the scalpel or Blizard's knife been used for the division of the prostate,—had the operator divided the left lobe in entering, and enlarged his incision as he withdrew his instrument,—he might then have easily divided the right lobe sufficient to admit of the extraction of the stone not only with comparative facility, but with every chance of safety to the parts and the system at large. There was nevertheless no time for reaction; and death must have been the result of the general shock to the system.

In a fourth case the operation was performed correctly and expeditiously in a young man of 18. But in extraction the stone broke in the gripe of the instrument, and, notwithstanding every means used to recover the fragment, it was left in the bladder. The operation, which lasted two hours, was followed, after a few days, by slight pains in the loins and some tenderness about the lower part of the abdomen; irritative fever was established; and death took place a fortnight after the operation. The intestines, liver, and the digestive organs generally were sound. The right kidney was in a state of suppuration, the left contained serum. The ureters were enlarged, their coats thickened, and highly vascular. The coats of the bladder were fully half an inch thick, and the internal surface everywhere covered with black fetid mucus, except the *fundus*, which, however, was reddened. A portion of stone was found in the lower and posterior part of the organ. The prostate gland was softened into a mass of fetid matter.

The rule of practice which Mr Fletcher deduces from such a case as this may be understood from the following extract:

"On the whole, therefore, I should prefer relinquishing the fragment of stone rather than continue a violent irritation in searching for it, or in vain attempts to pluck it from the spasmodic grasp of the bladder. There is an evil to be apprehended in both practices, but the least is that which requires least violence. The spasm of the bladder which holds the stone may subside; and in such a case the stone might be expected to offer itself at the external opening. The spasm, indeed, is more likely to yield after the teazing of the bladder has been withdrawn by desisting from all further attempts. This was certainly the case in the foregoing example. As long as the excitement from the operation lasted, so did the spasm which held the stone. It is, indeed, a law of all spasmodic actions, that they last not long if their source be removed; and this would seem to be an additional argument for leaving a fragment of stone in the bladder, at least for a time under the circumstances already described." There can be little doubt that when attempts to seize or to find a stone are continued for an hour or more, the bladder is not likely to escape uninjured.

The next case furnishes proof that death may ensue from inflammation of the inner vesical membrane, in consequence of the irritation of sounding. A healthy boy of 6 was brought to an hospital with symptoms of stone. He was twice sounded by the surgeon, who satisfied himself on both occasions of the existence of a stone. On the day appointed for operating, the operator could not feel the stone, and several surgeons tried successively, but without recognizing the stone. The operating surgeon at length put a stop to those proceedings; but his interference was too late. The boy was put to bed complaining that his belly ached. Active peritoneal inflammation followed; and, notwithstanding the most energetic means to control it, death took place on the fourth day after the sounding. On inspection the inner membrane of the bladder was found spotted deep-red everywhere, and its peritoneal coat was glued to that of the intestines, which were on all sides inflamed and covered by lymph.

This case suggests another question, whether it would have been right to operate on the ground that the stone was recognized by the first sounding?

"On the present occasion," says Mr Fletcher, "a sharp dispute arose between the operating and consulting surgeon as to the propriety of cutting the patient, on the strength of the fact, that a stone had been distinctly felt by the operating surgeon some days before that on which the operation was to be performed.—" If," said the consulting surgeon, " it was there a few days ago, it is there now. There could be no denying this position; yet the operating surgeon was right in refusing to cut this patient without the consulting having satisfied himself also of the presence of a stone. In this particular case he was more than commonly right, in saving, by his firmness, the operation from the discredit of a failure, but more especially the unfortunate child from the pain of a useless and terrible operation."

The sixth case is an instance of fatal termination, in consequence of continued violence in searching for a stone after the bladder had been skilfully and favourably opened. The stone was unusally small; and, after the forceps were properly introduced, it either eluded their gripe, or slipped from between the blades. After searching for half an hour in this manner the stone was extracted. The patient, however, was in a cold torpid state when put to bed, and, notwithstanding the use of cordials and opium, he never rallied perfectly. For some tenderness of the belly, which supervened the following day, he lost blood, and took purgative medicine; but death took place on the fourth day. Excepting thickening of the bladder, which must have been of long standing, there was no mark of disease in the inner membrane or in the peritoneum. The fatal result of this case, Mr Fletcher ascribes partly to the shock in consequence of the irritation from the long continued use of the forceps, and partly to the debilitating effects of the blood-letting. To depletion after lithotomy he expresses a general aversion; and he maintains, that in children blood-letting is not only unnecessary, but positively hurtful. Inflammation he regards as having little influence with them in causing death, while he ascribes it chiefly to the shock inflicted on their nervous system.

In the next case, death was the result of *peritonitis* supervening on laceration of the bladder. The subject was a tall well-made man of 29, emaciated and rather irritable, yet in other respects deemed favourable. The operator was the late Mr Brandon Trye, who thus describes the process of extraction:

"In the introduction of the conductor, I met with some resistance. I am not certain whether it was from my not having divided the muscles with sufficient freedom, and consequently the urethra close to the prostate gland, or from my pressing the beak of the conductor with too much force against the groove of the convexity of the staff. However, I resumed my knife, and divided the urethra, and a very small portion of the prostate, and then the conductor passed with ease. The stone was readily laid hold of by the forceps; but the resistance was so great, *that it was not without spending some time, and using much violence, that I could extract it.*"

Profuse hemorrhage followed, and even recurred after the patient was in bed. About an hour after, when a pupil had ascertained that the hemorrhage continued with much pain, Mr Trye returned immediately, and concluding that there was blood in the bladder, dilated the wound, and had the mortification to find his suspicion was well-founded. Much coagulated blood was removed, and dressings and astringents were then applied to repress the hemorrhage, but with little avail. On leaving the wound to itself, however, and applying a cold solution of sal ammoniac over the belly, the wound, and between the thighs, the hemorrhage ceased. The pain, however, increased, and spread over the belly with tension. Death took place on the fourth day. Dissection showed considerable laceration of the bladder in distinct rents and different directions, but none of them extensive, with general inflammation of the peritoneum.

On this case, Mr Fletcher properly remarks, that, though the hemorrhagy was very great, yet it had no share in producing death, and may be even regarded as a likely means of preventing this result, so far as it depended on the peritoneal inflammation. The injury inflicted on the bladder, and through that on the system at large, was the true cause of the fatal event.

The next case, also by Mr Trye, is an instance of *peritonitis* from violence, which subsided under treatment, yet was followed by death, in consequence of inflammation of the pelvic cellular tissue, and of the kidney. The peritoneal attack was remarkable for appearing to be rather aggravated than alleviated by blood-letting and warm fomentations, and subsiding at length under the application of camphorated spirits and laudanum applied cold. But though the abdominal pain disappeared, the pulse never became slow; and death took place on the twenty-first day. Inspection showed the tunics of the bladder greatly thickened,—to nearly half an inch; its cavity so much contracted as not to contain more than two or three spoonsfull of urine; and its mucous lining spotted with red. The wound was large; its sides had sloughed; and the prostate was completely divided. In the neighbourhood of the bladder the intestines were agglutinated by coagulable lymph; and behind the adhesions was a cavity full of purulent matter, which had denuded the sacrum, and detached the rectum. One kidney was converted into a membranous cyst containing purulent matter.

To counteract apparently the impression which the details of these two last cases are likely to create on the mind of a reader, Mr Fletcher is anxious to show that Mr Trye, though bold and fearless, and occasionally rough, was nevertheless a good operator in general, and quite a master in lithotomy, with all that coolness and calmness which arises from perfect anatomical knowledge and thorough acquaintance with the parts with which he had to deal. The natural inference is, that mere anatomical knowledge, though indispensable, is not all that the good operator requires. He ought to possess delicacy of hand, and, with great steadiness, to unite that gentleness which is requisite in dealing with delicate organs.

The cases now sketched, eight in number, constitute the whole amount of deaths in 59 operations performed within the knowledge of Mr Fletcher. This gives a mortality of 1 in 7.375, which is rather less than occurred in the practice of the Norwich and Norfolk Hospital, but more than the general average of late years.* It is clear that Mr Fletcher is perfectly correct in tracing these cases not only to violence, but to violence which is unnecessary, and excluding which, supposing this possible, the entire number of these 59 cases ought to have recovered. In the first case only he is willing to concede that the violence can scarcely be called *unnecessary*, because, unless the surgeon is quite sure of breaking the stone in the bladder, he has no alternative between wrenching it out by main force and leaving it unextracted; and the latter his pride and regard for his reputation rarely allow him to do. Mr Fletcher, in short, arrives at the conclusion, that in all cases in which the stone can be ascertained to be above the size for extracting by the lateral operation, that operation ought on no account to be attempted, since it argues either ignorance of the capacity of the aperture which the structure of parts allows to be made, or a wilful determination to sacrifice the life of the patient to the reputation of the surgeon. "It is surely," he says, "any thing but a scientific operation to force a rough stone as large as the fist by such a route through an aperture in a delicate and important part of the human body, only one inch wide." It is some proof of the sincerity, as well as the justice of Mr Fletcher's views, that he does not deny that he has himself been guilty of these errors, when acting under the example of predecessors, and from the conviction of the impossibility of acting otherwise with a concretion too large to be extracted without force, and too hard to be broken easily. To make amends, therefore, for these sins of his youth, Mr Fletcher, now with the experience of age, counsels the surgeon first to ascertain the size of the stone, and secondly, if it be large, to abandon all thoughts of the lateral operation, and employ the recto-vesical method.

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* See our account of the valuable paper of Dr Yellowly in the Phil. Trans. 1829, in Vol. xxxiii. p. 192.

The subject is closed with the details of five cases, which, though not absolute failures, made near approaches to that consummation. In the first case in which the operation was well performed on a man of 73, a large stone was easily extracted, and part of a smaller one was broken off, while the rest was left behind in a cyst. Abdominal pains, with thirst and general fever supervened, and required for their removal the loss of 35 ounces of blood, the application of 54 leeches, free purging, and the warm bath. Recovery at length was effected, the sacculated stone remaining behind, and forming, according to Mr Fletcher, a precedent for that practice on all future occasions. In the second case, a man of 50, experienced, after sounding symptoms of *cystitis*, yet underwent the operation well, and had two stones extracted. Profuse hemorrhage required the cordial powers of brandy and opium, and recovery took place. Some time after he returned with a second stone in his bladder, and underwent the operation once more, yet without the same symptoms of irritability of the inner vesical membrane, when a sacculated stone was jerked out of its position. Sixteen months after the second operation the same patient had again symptoms of stone. The other two cases, though good, contain nothing requiring to be repeated here.

Mr Fletcher is, we think, rather superfluously hostile to the operation of lithotrity. He is certainly in some degree justified in regarding the bladder as a very irritable organ in patients with stone; but we know not that he is correct in applying this inference so generally as he seems to do, and therefore, in denouncing lithotrity as an operation which combines and even exaggerates all the evils incident on sounding and on the use of forceps. It is a singular fact that in the cases operated on in Paris by Civiale, so little irritation seems to be created, that the patients often walk home afterwards; and in none of the cases have any alarming symptoms of inflammation taken place. Mr Fletcher is further mistaken in asserting that not one case of lithotrity has been performed by a British surgeon in a British hospital. He will find, if he consults the pages of this Journal, that the operation has been performed by Mr Liston in the Royal Infirmary of this place, (Med. and Surg. Journal, Vol.

xxxi. p. 299,) and previously by the same surgeon on a private patient, (Vol. xxix. p. 222.)

The subject of the seventh note is a case of dilatation of the posterior aural artery, attended with most excruciating pain of the head and left side of the throat and neck, as also great pain in deglutition; all of the neuralgic character. The disease was treated first by ligature, with the effect of removing the tumour and the pain temporarily, and facilitating deglutition. Thirteen months after the patient returned with the pains in all their original violence, though capable of being alleviated, and even suspended, by pressure. They were a second time removed by an incision; and it appears then to have occurred to Mr Fletcher that the disease consisted in an affection of the *portio dura* or lateral facial nerve. Local bleeding by leeches was recommended without relief; and as the woman was importunate, it was determined to remove the scalp and examine the bone. This was done, and the cranium was bored with a *terebra* with the view of producing exfoliation. All the pains left the head in the meantime, but before the wound healed they recurred with their former violence. A deep incision was again made with the effect of removing the pains, but inducing, as before, ringing in the ear and some nervous sensations. The woman, about six weeks after this, was discharged well, but without sensibility in the greater part of the scalp on that side of the head.

Mr Fletcher concludes with some observations on the cause and seat of this peculiar pain; but they cannot be said to be satisfactory. We have had occasion to point out one instance in which Mr Fletcher would be the better for consulting the pages of this Journal. He must forgive us for telling him there is yet another. The case of Mr Syme, which he properly mentions as analogous to his own, is originally published in the 31st volume of this Journal, p. 66, and not in the Medico-Chirurgical Review.

The subject of the eighth note is a chronic encysted tumour found near the *testis*, resembling encysted hydrocele of the chord, and liable to be confounded with affections of the testis itself. We must allow the author to give his own description.

"This tumour may be distinguished from hydrocele and its varieties, by its want of transparency, its age, the hard incompressibility and weight, and the want of fluctuation; for though there is a fluid, yet it is very thick, the cyst which contains it is also so thick as not to admit of that motion being perceived through it. Its long existence will scarcely permit the patient to remember much of its early history,—unless it arose from a blow.

"From hernia it may be distinguished from its never changing its size suddenly, or disappearing, which hernia will generally do at times, and by the peculiar impulse given to hernia in coughing, which act will not at all affect this tumour. Where the position of the testis is much obscured by the growth or situation of the tumour, and its guidance wanting, this tumour may be taken for a scirrhous affection of that organ, especially if the swelling be of a small size. But the hardness of the former is smooth on its surface, of the latter, knobby, and the cord is thickened.

" Both affections are slow in their progress, but in scirrhus there is an affection of the health, and lacinating pains shooting along the cord to the back. In the tumour there is no pain, unless the part should have received fresh injury, and then it will be of the character of that pain which precedes suppuration, and which is altogether unlike the pain of scirrhus. That it is sometimes taken for a diseased testis is clear, for it must have been a tumour of this kind that a surgeon mistook for the testis, and removed the latter in mistake; as described by Sir A. Cooper, in his beautiful work on the testis.

" If the testis could always be satisfactorily felt, this would be decisive, that at least the affection could not be of that organ. But, when the detection is not affected, the tumour might be confounded with another disease, by a very careless observer of it, viz. the first stage of *fungus hæmatodes.* This last, like the tumour, has, in this stage, a smooth surface and hardened character; but the former is of some years' existence, and does not change its appearance,—whilst the nature of the fungus is comparatively rapid in its changes: the hardness possessed by it quickly passes into its latter stages, which are marked by softness, (frequently equal to a common hydrocele,) by a discoloured skin, the surface of which will soon be covered by large veins, and by a disturbance of the health, with a sallow, haggard, and peculiar expression of countenance.

" If the testis can be discovered at the bottom, or near the encysted tumour, the distinction becomes very easy; not only from the last objection, but from all others to which the testis is liable. For, this organ being discovered at the bottom of the swelling, the only affections with which the chronic tumour could be confounded would be the encysted hydrocele of the cord and hernia, the character of which last has been already described.

" The situation of this tumour above the testis, and about the cord, its hard and insensible feel, its age, (with which its hardness will correspond) its origin, (most commonly from an accident,) its obscure fluctuation, should its age be not very great, will serve to identify its nature: though it might, even with this knowledge, be confounded with the hydrocele of the cord, where it is combined with hydrocele of the tunica vaginalis, should the surgeon be rapid or careless in his manipulations. It could hardly be taken for an hæmatocele,—though it takes its rise probably in the same way;—and if by that term is understood a bloody collection in the *tunica vaginalis*, for the situation of the chronic tumour is somewhere about the cord, either in front or behind it. Hence in the hæmatocele the testis is not distinct and of its natural size, as it is engaged in the general swelling. In the chronic tumour it lies separate from the swelling, and may commonly be discovered immediately below it. But if, as some authors have described it, a species of hæmatocele may arise in the situation of the cord, from a rupture of the spermatic vein, then it can be supposed that blood so extravasated may, in the course of time, with the gradual thickening of its coverings, become the kind of tumour already described. This extravasated blood, deposited anywhere about the scrotum, may be the origin of similar tumours in any situation about the testis,—which would be detected more or less easily, according to the relative position, and the size and form of the swelling, which it is presumed must long since have become chronic, and marked by the peculiar characters already described. —Pp. 122, 124.

The proper treatment of this disease when its peculiar characters can be recognised, consists in puncture, evacuating the contents, and by injecting a slightly stimulating fluid to effect obliteration of the secreting cavity of the cyst. It appears in some instances to have been removed under the apprehension of malignancy, but without good grounds.

The subjects of the ninth and tenth notes, which do not form proper topics for notice here, may perhaps on some future occasion be introduced into our Medical Intelligence.

Our opinion of this performance, we have already expressed almost by anticipation. We are always happy to see diligence in professional men, in every form promoting the interests and advancing the progress of the art of healing. The present author has been laudably engaged in contributing in this manner to rectify mistakes, to remedy evils, and to introduce improvements; and he is well entitled to the thanks of every one interested in the practice of surgery. Were we disposed to be critical, we should say he is too fond of meditations and reflections, and painting the unfavourable side of cases in the darkest and most gloomy colours. It is a mistake to suppose that this conveys a more vivid impression than the plain unvarnished statement of the facts. In general, it prepossesses a reader of taste against the work; and it is always the safest and truest policy to let the facts speak for themselves. The facts of Mr Fletcher are good, and require no adventitious aid; and he must endeavour to state them without ornament in the next part of the work, which he gives us to understand is to be forthcoming.

In the present publication, the observations on lithotomy are the best part of the work; and they convey lessons which, if studied with sincerity and attention, ought to render the operation of lithotomy greatly safer and less fatal. They ought to make a deeper and more lasting impression, that they proceed from one who has himself participated in several of the errors which he condemns, and which more experience and clearer views convince him may be avoided.

PART III.

MEDICAL INTELLIGENCE.

PHYSIOLOGY.

Some considerations with respect to the Blood, founded on one or two very simple experiments on that fluid. By Benjamin Babington, M. D., &c. (From the Medico-Chirurgical Transactions, London, Vol. xvi. p. ii. p. 293.*)*—These considerations disclose some curious and interesting views regarding the constitution of the blood. If blood be drawn in a full stream from the vein of a person labouring under acute rheumatism, into a glass vessel till it reaches the brim, a colourless fluid may be perceived round the edge of the surface, and after an interval of four or five minutes, a bluish appearance is observed forming an upper layer of the blood, in consequence of the subsidence of the red particles to a certain distance below the surface, and the clear liquor being left between the plane of the red particles and the eye. By immersing into this upper layer a spoon previously moistened, and with its edge gently depressed, this liquid may be collected free from the red particles and transferred into another vessel by repeated immersion of the spoon. The vessel employed by Dr Babington is a globular bottle holding about 280 grains, with a narrow neck, and perforated glass stopper. The liquid thus collected is opalescent, somewhat viscid, and at first perfectly homogeneous, but after some time separates spontaneously into two parts, a clot of matter like fibrine moulded on the shape of a bottle, and clear serum possessing the usual characters of the fluid. This opalescent liquid Dr Babington distinguishes by the name of *liquor sanguinis;* and from the phenomena of the experiment now detailed, he infers, that buffed blood consists of *liquor sanguinis* and the red particles.

The manner in which he explains the immediate cause of the buff is the following. Admitting the established fact that the blood of a person affected with inflammation coagulates more slowly than healthy blood, and that the last portions of blood drawn from an animal bleeding to death coagulate most rapidly, he thinks that the blood in the former case preserves its fluidity long enough to permit the red particles, which are specifically heavier, to subside through it. At length the *liquor sanguinis* separates by general coagulation and contraction into two parts, and the phenomenon takes place uniformly throughout the liquor. That part through which the red particles had time to fall furnishes a pure fibrine, or buff, or crust, as it is named, while the portion into which the red particles had descended furnishes the coloured clot. This in extreme cases may be very loose at the bottom, from the great number of red particles collected there, each of which supplants its bulk of fibrine, and consequently diminishes firmness at that part. With this exception, however, there is no more fibrine in one part of the blood than in another.

These simple but ingenious views explain sufficiently the reason why the appearance and formation even of the inflammatory crust are influenced by the shape of the vessel. It is clear, that if such blood be received in a broad flat vessel, and consequently forms in it a shallow or superficial pool, the red particles not having space to descend, cannot quit the *liquor sanguinis* so completely as in a deep vessel. In the latter, on the contrary, after the blood has been suffered to rest, if coagulation proceeds slowly, the uppermost strata have so great a depth to pass through, that they may be altogether detached from the *liquor sanguinis* before coagulation is completed. This view is further confirmed by the fact, that even the buffy crust, if narrowly watched, is found after its appearance to throw out *serum.*

To show how much of this depends on the shape of the vessel employed, Dr Babington received two different portions of the same blood from different subjects, in a common pint basin, and in a pyriform specific gravity bottle; and supposed differences in the quality of the first and last portions were obviated by running the blood alternately into each. After the vessels and their contents remained at rest for a day, they were weighed; the serum was then decanted from the clot, which, with the vessels, were again weighed; and lastly, the clots were removed and the empty vessels weighed. The following results were obtained in four cases examined in this manner. The first column indicates the relative specific gravities of the blood and serum; the second the proportion of serum to crassamentum, the first being represented by 1000.

Cases.	Specific gravity.		Proportions of serum to clot.	
	Blood.	Serum.	Pyriform bottle.	Basin.
Purpura,	1050	1027	1495	2230
Pregnancy,	1049	1028	945	1716
Phthisis,	1044	1028	960	1090
Diabetes,	1048	1079	1292	1717

To the foregoing conclusions, it may be objected that they are derived from experiments performed on diseased blood. To obviate this objection, Dr Babington performs the experiment in the following manner. Of two similar tall glass jars of the capacity of about four or five ounces, one is half filled with olive oil, and blood from a healthy subject is drawn into each. The blood, which is made to flow through the oil, presents on its surface a layer of *liquor sanguinis*, which forms a buff or crust, while there is none on that which is received in equal quantity, and under the same circumstances, in the empty jar. Though this experiment does not always succeed in furnishing the crust, Dr Babington infers that it is quite sufficient for his purpose that it generally does, and that it makes an approach to the state of the blood in inflammation when received in a vessel.

From the first experiment Dr Babington also draws two conclusions; the first, that the *liquor sanguinis* is a homogeneous fluid, and no mere mixture of fibrine and serum; the second, that no change takes place in the sum of the densities of the constituents of *liquor sanguinis* by their separation, but that what the fibrine gains in specific weight is exactly balanced by what is lost by the serum. The first conclusion is sufficiently proved by the accuracy of the mould which the *liquor sanguinis* gives of the receiving bottle. The second is demonstrated by the fact, that the bottle, if exactly filled with *liquor sanguinis* at a given temperature, remains full, notwithstanding subsequent coagulation, as long as that temperature is maintained. From these experiments Dr Babington, therefore, further infers, that fibrine and serum do not exist as fibrine and serum in circulating blood; that blood consists of *liquor sanguinis* and colouring matter; that the former is a homogeneous fluid, which is essentially fluid in the living body and in the healthy state; that it is only after the vital laws cease to operate that it becomes separable into fibrine and serum; and that this separation, whether occurring in the living body during disease, or in the dead on the extinction of life, may be considered as equivalent to death of the blood.

These views lead the author to several ingenious and novel applications. He infers, for instance, *first,* that there is no such animal fluid in existence as coagulable lymph; for the *liquor sanguinis* cannot be regarded as identical with this fluid, since in the living state it is homogeneous, and there is none else with which it can be identified. This view is perfectly correct; and it is further correspondent with the fact, that what is named coagulable lymph or albuminous exudation is always discharged in the fluid form, and it is only some time after being discharged, that it undergoes separation into lymph and serum. *Secondly*, Dr Babington infers that when serum is effused in any part of the living body, we generally find a corresponding deposition of fibrine. There is no such thing as serous fluid in the healthy state in the interior of the closed membranes, nor is its presence requisite to lubricate those membranes. The presence of this fluid in these cavities after death depends on the rapidity and the facility with which the *liquor sanguinis* is separated into fibrine and serum the moment its vital powers cease. *Thirdly*, Dr Babington denies the statement that these membranes have the power of secreting serum during health, and therefore questions the propriety of denominating these membranes *serous*. They may, when diseased, effuse *liquor sanguinis* or blood itself, and either of these fluids may, by separation, give rise to the presence of serum. *Fourthly*, In the sequel of his paper, Dr Babington shows, from a variety of facts and arguments derived from the phenomena of morbid effusions, that whenever fibrin or albumen is effused, serum is also present, and conversely, that whenever serum is effused, albumen is also present.

There can be no doubt of the accuracy of these conclusions; from inflammation of a serous membrane on the one extreme to the liquor of ordinary dropsy of the cellular tissue and the liquor of blisters on the other; and several circumstances in the history of the different kinds of effusion, leading to the same conclusion, are stated by Dr Craigie in various parts of his Elements of Pathological Anatomy, (p. 609, and 610, 760—762, 765, 774.) Dr Babington, indeed, is perfectly correct in stating that albuminous flakes are found in more or less abundance in cases of dropsy, and that their presence is a proof of the justice of his theory.

In conclusion, Dr Babington directs the attention of physiological observers to the analogy between chyle and *liquor sanguinis*; and as he thinks that the resemblance is sufficiently close to ascribe the formation of the latter to the presence of the former, he infers that, in order to understand the process of *hematosis*, we have merely to account for the origin of the red particles. On the latter subject, however, he advances nothing positive, unless a denial of the hypothesis proposed by Hewson, that they are formed in the spleen; and this he controverts on the ground of microscopic observation.

MEDICAL PATHOLOGY AND ETIOLOGY.

Case of Loss of Sight and Smell occasioned by a tumour in the base of the brain (Revue Medicale, Avril 1831.*)*—An elderly female was admitted into the hospital of Salpêtrière, on account of violent pain in the forehead. The pain was of long standing, but had increased much in severity a few days before. There was considerable somnolency, and although the intellectual functions were on the whole entire, she answered questions sluggishly. She had been blind for four years; yet the eyes were clear and apparently free of organic injury. The sense of smell was extremely obtuse, so that from being a great snuff-taker she had abandoned the practice, because it produced no sensation whatever. The pulse was frequent, the skin hot, the other functions natural. She was freely bled, but without any advantage. On the day after her admission she became comatose and paralytic; on the third day the coma was profound, yet accompanied with taciturn delirium; and in this state she lingered on till the sixth day, when she expired.

The dura matter was found healthy. The surface of the cerebral arachnoid was dry and somewhat rosy. The convolutions of the brain were flattened and effaced, the brain filled the cavity of the skull completely, and the ventricles were free of serosity, and had their parietes closely applied to one another. There was a tumour of the size of a hen's egg on the *sella turcica*, apparently formed by a developement of the stem of the pituitary gland, and consisting of a fibrous cyst with internal partitions of the same material, and a fibro-cellular matter within them. This tumour was lodged in the brain, the floor of the third ventricle being raised up and the anterior extremity of the longitudinal fissure separated, in order to give it room. Hence both olfactory nerves were pushed much outwards and greatly flattened. Besides, the optic nerves were pushed directly upwards and were flattened out, particularly at their commissure, to an extreme degree of thinness, so as to be spread over the tumour like a membranous covering. The anterior part of these nerves, however, was of the usual structure, and the whole component parts of the eyes appeared to be also in the natural state. The fifth nerve was uninjured. The other organs of the body were healthy, except that the mucous membrane of the stomach exhibited at its greater curvature several small, roundish ulcers, the bottom of which was formed by the muscular coat.

Case of Inflammation of the Spinal Chord producing Tetanus (Archives Gén de Méd Juin 1831.*)*—In our number for April 1830, a case was related from the Italian Annals of Medicine where inflammation of the substance of the chord produced external symptoms exactly similar to tetanus. The following is another interesting example of the same nature. We are not yet sufficiently acquainted with the pathology of this disease to be able to explain why, in circumstances apparently the same, there is produced sometimes paralysis, sometimes spasmodic action of the muscles; but the difference is worthy of particular attention.—A healthy elderly woman, accustomed to field labour, was suddenly seized without apparent cause with acute pain in the loins and along the back, and almost immediately afterwards with a general and extreme rigidity, by which she was deprived of the use of her limbs. On the fifth day, when she entered the hospital of St Antoine, and was first seen by M. Combette, who describes the case, there was general contraction of the muscles, semiflexion of the fore-arms with extreme difficulty in extending them, extension of the limbs with impossibility of bending them, constant closure of the jaw, extreme difficulty and pain in speaking, difficult deglutition, redness of the features, suffusion of the eyes, fulness and hardness of the pulse, considerable frequency and some labour of respiration, and perfect preservation of consciousness. She was immediately and freely bled. Next morning her state was unaltered; and she screamed aloud when she was touched or any attempt was made to move her. The blood was buffy. Stimulant draughts were now given, with a drachm of laudanum, blood was withdrawn from the loins by cupping, cataplasms were applied to the back, and opiate friction used over the body generally. In the evening no change had taken place except that deglutition had become much more difficult. At midnight the breathing was laborious and accompanied with mucous rattle and frothing at the mouth. Sopor now appeared, interrupted, however, by screams when she was meddled with. The pulse continuing full and strong, and the countenance flushed, she was again freely bled, after which she expressed herself relieved. Her attendant then urged her to take one of her draughts, which she was very unwilling to do; she at length yielded; but immediately the contractions were much increased, violent convulsions ensued, and in this state she expired.

On dissection thirty hours after death, there was found great rigidity of the extremities; vascularity of the cerebral membranes, and somewhat more redness of the cerebral texture than is natural; much serum in the canal of the spine; the spinal membranes and particularly the inside of the dura mater of a bright rose-red colour; the surface of the chord covered with a net-work of vessels; softening of the anterior part of the chord, so as to present no resistance to the knife and to form indeed throughout its whole length, a soft semiliquid pulp of a lively rose colour, especially in the cervical and lumbar regions, where some spots of extravasation were also seen; no deviation from the healthy state in the posterior part of the chord; no particular appearance at the origins of the anterior or posterior nerves; the pneumogastric nerves, and cervical ganglions of the sympathetic nerve in a healthy state; the lungs gorged, especially at their base and posteriorly; the mucous membrane of the stomach of a pale yellow tint, with some red points here and there; the other internal viscera healthy.

Case of Perforation of the Stomach by latent Ulceration. (Archives Gén. de Méd. Mai 1831.*)*—A young lady, in her eighteenth year,—who enjoyed excellent health, and was of a robust habit of body, although affected with suppression of the catamenia and of a chlorotic colour,—became subject to eructation, slight colic pains, and tension of the abdomen after meals, but in so slight a degree that little attention was paid to her complaints. On the day on which she was seized with serious symptoms she had taken a long walk, according to custom, had frequently run up several long stairs, and taken a lesson in dancing without experiencing any feeling of fatigue. At five she dined heartily. At eight, as she was putting on her shawl to go out, she was seized with a fit of coughing and sneezing, in the course of which she suddenly felt a burning pain in the left hypochondrium, so violent as to produce fainting, and compel her to lie down. In half an hour her physician, M. Duparcque, found the abdomen moderately tense, and slightly tender only under the left false ribs. There was some general oppression; but the pulse and animal temperature being natural, he was satisfied with ordering leeches to the belly, emollient fomentations and complete rest. Nausea, attempts to vomit, and eructations occurred after his visit, and the lady's relatives therefore did not apply the leeches, thinking her complaint was merely a slight indigestion. But then the belly began to swell and grow tense; oppression, anxiety, and acute pain supervened; and at eight next morning M. Duparcque found his patient in a state of collapse, the countenance altered, the eyes dull, the limbs cold and blue, the pulse small, the abdomen enormously enlarged, tympanitic and fluctuating; and a short time afterwards she expired. On laying open the abdomen, much gas was discharged; the intestines were found distended; the cavity contained three pints of yellow milky serum, with floating shreds of lymph, but without any trace of alimentary matters; and the visceral folds of the peritoneum, with the exception of that over the intestines and mesentery, were covered with a very thin and tender layer of lymph, especially on the anterior surface of the stomach and around the liver. The stomach was contracted. On its antero-superior surface, two inches from the cardia, there was a circular aperture, a line and a half only in diameter, without any appearance of adhesion between its margin and the concave surface of the liver, with which it must have been in contact. The cavity of the stomach contained several spoonfulls of clear fluid. Its parietes were unusually and uniformly thick; but the three coats were quite distinct and without any unusual appearance in point of colour or density. In the situation of the aperture there was internally a roundish depression, eight lines by five, the edge of which was perpendicular on one third of its circumference and oblique at the rest of it. A layer of healthy mucus covered not only the whole mucous coat of the stomach, but likewise the depression up to the margin of the perforation; and on macerating the tissues, it was found that the mucous and muscular coats were wanting over the whole depression, but that the mucous coat had begun as it were to spread itself over the cavity, evidently showing that cicatrization had been going on.

In this case the violent and unremitting symptoms, which usually follow perforation of the stomach, were not present from the beginning, because in all probability the portion of the organ which was perforated lay in close contact with the liver, so that, when the opening was made, no part of the contents of the stomach escaped into the general cavity of the belly. It is extremely probable from this circumstance that complete rest and the active use of antiphlogistic measures, with starvation for some days, might have been attended with limitation of the peritonitis, adhesion of the edge of the aperture to the liver, internal cicatrization, and recovery. The case is likewise interesting as a valuable addition to the instances already recorded of perforation occurring as the last stage of an ulcer, of the existence of which no previous symptom could be said to have been present.

On the Identity of Small-pox and Cow-pox, and on a Mode of inducing the vaccine pustule in the cow at pleasure. (Journal der Praktischen Heilkunde, Januar. 1831.*)—Dr Sonderland* of Barmen, the author of the paper, which we shall here translate almost without abridgement, if his experiments be correct, has at length succeeded in establishing, what physicians have long laboured to discover,—a satisfactory and simple explanation of the protective power of cow-pox against small-pox; and has announced, we will venture to say, the most important discovery which has been made in the pathology of these diseases since vaccination was first introduced,—by showing that they are modifications of one another and that cow-pox in the cow is simply small-pox in man, and may be produced in that animal at will by the variolous contagion. Of the authenticity of his facts we do not pretend to judge. All we can say that the author, if we judge from the language of Hufeland towards him, is a respectable practitioner, and a public medical officer.

"The simplest and surest mode," says he, "of producing cow-pox in the cow, and thus proving indisputably the identity between the contagion of cow-pox and that of human small-pox, is to follow the procedure here laid down.

"Take a woollen bedcover which has lain on the bed of a small-pox patient who has died during the suppurating stage, or is suffering from the disease in a considerable degree, and is lying in a small, imperfectly ventilated apartment; and when it is well penetrated by the contagion, roll it up immediately after death or on the fourteenth day of the disease, wrap it in a linen cloth, and then spread it for twenty-four hours on the back of a quey in such a manner that it cannot be thrown off by the animal. Then place it for twenty-four hours on the back of each of three other queys, and afterwards hang it in such a manner in their stall that its exhalations may rise upwards and be inhaled by them. In a few days the animals will fall sick and be seized with fever; and on the fourth or fifth day the udders and other parts covered with hard skin will present an eruption of pustules, which assume the well known appearance of cow-pox, and become filled with lymph. This lymph, which exactly resembles the lymph of genuine cow-pox, if used for inoculating the human subject, will induce the vaccine or protective pock. The only precaution which it is necessary to observe is that the person about to be inoculated shall not be exposed in any manner to the contagious effluvia of the cow-house either directly or through the intervention of the experimentalist's clothes, otherwise he may have natural small-pox.

"A bedcover impregnated with the variolous contagion, if firmly rolled up and wrapped in linen and afterwards in paper, and then properly packed in a bucket, will retain the contagion for at least two years, so as to infect a cow with cow-pox, provided it be kept in a cool, shady place where the temperature does not fall under 32° or above 52.

"My present occupations prevent me at this particular period from giving a full and scientific exposition of the consequences which must follow from this discovery; but I may state them shortly in the aphoristic form.

1. "This discovery is new; for, although many have suspected the identity of small-pox in man and cow-pox in the cow, and have in consequence performed inoculation with the matter of both, yet no one has previously ascertained the possibility of transmitting the contagion to the cow in the gaseous form, so as to decide the question beyond all doubt.

2. "The desire of physicians and governments to discover cow-pox in cows, in order to revive the vaccine lymph, is more than fulfilled by the discovery of a simple method of engendering cow-pox in the cow at will.

3. "Jenner's discovery of the protective power of vaccination hitherto imperfect, is now perfected, because the hitherto unknown nature and origin of cow-pox are laid open.

4. "All previous uncertainty regarding the quality of vaccine matter, its degeneration, the loss of its protective property, and the like, must now cease, because we have obtained a clear insight into the nature of cow-pox and can lay down a substantial theory of its operation.

5. "This discovery must tend to widen the boundaries of physiology, pathology, and therapeutics, since it shows how the subtile contagion of small-pox, so hostile to the nervous system of man, may be conveyed in the aeriform state from him to the cow, excite in that animal a similar disease, but in doing so be changed by the special constitution of this class of animals into a permanent contagion of a different kind.

6. "An instructive lesson may be drawn from this discovery how the poison of diseases in the gaseous form may be communicated to the lower animals, and according to the difference in their constitution engender diversified products, which may then be used as protective means against the diseases from which they originated. Such for example may be subsequently proved of scarlet fever, measles, yellow fever, and plague.

7. "It is now clear why in recent times cow-pox has been seldom or never seen in the cow. For the cow-pox of the cow arises merely from infection by the variolous exhalations from men recently affected with small-pox, and coming in contact with the cow. As epidemics of small-pox have been rare during the last thirty years, cows could seldom be exposed to infection, and have therefore seldom exhibited the disease."

On the recurrence of susceptibility of Cow-pox and its connexion with susceptibility of Small-pox. (London Medical Gazette, July 16th 1831, *and Journal der Praktischen Heilkunde, Marz* 1831.*)*—The medical profession are undoubtedly coming slowly round to the opinion which was for a long time scouted,—that the protective power of vaccination against small-pox wears gradually out, and is at length nearly or altogether lost. *Dr Gregory* of the Small-pox Hospital, in a paper on the Recurrence of Exanthematic Fevers, has avowed himself a convert to this doctrine, or at least as being on the road to become so. He has made some careful experiments on the question, whether the susceptibility of cow-pox returns after a time; and has satisfied himself that it does in many instances. In many persons he observed resistance to a second infection even after an interval of twenty-five years; but in others he found the vaccine pustule go through its stages regularly at the usual intervals, although a period of twenty-one years had elapsed since the first vaccination, which was ascertained to have run its course in a regular manner; and in some its course was of the usual duration even in children of ten years who had been satisfactorily vaccinated in infancy. Much more commonly, however, re-vaccination even about the age of puberty, or some years afterwards, when it has any effect at all produces a modified vaccine pustule.

These observations are confirmed by others in the same line of inquiry, made by *Dr Wolde* of Winsen in Hanover, on the occasion of an epidemic of small-pox in his neighbourhood. The people became so much alarmed by several bad cases of small-pox occurring among them, that they cheerfully allowed Dr Wolde to make the experiment he had often wished to try on an extensive scale; and he vaccinated no fewer than 100 individuals who had been vaccinated before and had a regular mark. Of these some were only two years old, others between that and five years, and others from that to five and twenty.—Of the total number twenty had the regular vaccine pustule differing in no apparent respect from that of a first vaccination. The matter from these pustules was used to vaccinate several children who had not previously had the cow-pox; and it sometimes produced a regular pustule, the matter of which in its turn communicated the regular cow-pox; but sometimes, on the other hand, it had no effect at all, though tried again and again, and although taken from pustules which appeared in every respect like genuine cow-pox. Besides the twenty who had the genuine cow-pox there were other nine who had it slightly modified: Its course was quite regular, but shorter than the true cow-pox; that is, a complete areola was formed so early as the seventh day, and the lymph was by that time coagulated. Among these one was the author's own daughter, who was vaccinated by himself twenty-three years before, and went through the disease regularly. On the second occasion four punctures were made on the two arms, which produced four pustules that followed a regular course till the seventh day, but went through it more rapidly than usual. On the sixth day, there was a complete areola; on the seventh, the whole arm was somewhat erysipelatous; the pustules had the characteristic depression in the centre, but remained flat and never filled; and on the eighth day, the erysipelas as well as the areola disappeared, while at the same time yellow crusts began to form.—Farther, there were thirty-one other individuals who had a slight local affection which lasted three or four days, producing a circumscribed inflammation like a leech-bite, or a slight suppuration of the inoculation-mark, followed by a small yellowish scab.—Twenty-five had no local affection whatsoever.—Of the hundred individuals eighty-five were above, and fifteen under, ten years of age. Of the former, sixteen,—and of the latter, nine were not affected at all.

We have said that ten years of age was the earliest period at which Dr Gregory was able to observe a distinct recurrence of susceptibility to the cow-pox. He adds as a singular concurrence, that he never met with a case of modified small-pox under that age.—Another remarkable coincidence he has also observed is, that those who from peculiarity of constitution are unsusceptible of cow-pox are also unsusceptible of small-pox in the way of inoculation. He has only had an opportunity of making two experiments of this nature; but they were decisive. The operation of vaccination had been performed in one instance fourteen times, in the other twice. In both imperfect papulæ formed and died away in a few days. In both the small-pox inoculation had as little effect; elevated spots were perceptible for a few days, but they speedily died away.

From a consideration of all these analogies Dr Gregory is inclined to believe, that wherever the constitution is susceptible of cow-pox, it is also open to the attack of small-pox; and hence that, if the susceptibility of cow-pox recurs some years after a first vaccination, the susceptibility of taking small-pox likewise recurs in the same degree.

On the Trades which predispose to Consumption. (Annales d'Hygiène Publique et de Médecine-Légale, Juillet 1831*.)*—In the last number of this

Journal we entered into some detail on the liability to consumption observed in a particular trade, that of the steel-grinder. We are now enabled to pursue this important subject farther in consequence of the publication of an elaborate paper by *M. Benoiton de Chateauneuf*, who has investigated the relations of consumption to trades and professions generally.

He sets out with enumerating, among the trades which engender a disposition to consumption, that of gun-flint maker; and takes advantage of the opportunity to give a very curious account of the manufacture of gun-flints, of which we regret we cannot transfer to our pages more than a short sketch. The whole of France and the greater part of the Continent of Europe is supplied with this article from a single parish in France, the parish of Meusnes, containing a population of 1200 souls, of whom about 300 families are occupied with the flint manufacture. The French government alone consumes ten millions annually, and the exports amount to 280 millions. This singular trade, however, has not been acquired without a terrible sacrifice of life and health on the part of the workmen. About the beginning of last century, before flints were used for muskets, the mortality in the parish was one in 33¼; of the births one-half survived till the eighteenth year; and the mean duration of life was 24¼ years. But after the establishment of the manufacture of flints, the mortality became one in 22¾; half of the births were cut off by the fifth year; and the mean term of life was reduced to 19½ years. The cause of this enormous increase in mortality, according to the author, is phthisis, arising from the inhalation of the flint dust.

After this statement, he proceeds to the other trades more methodically in the following manner. He examined the registers of four of the Parisian hospitals,—the Hotel-Dieu, La Pitié, La Charité, and Cochin,—taking for some of the populous professions a period of five years, and for others less numerous a period of double extent; and then determined the proportion which the deaths from phthisis in each trade bear to the total admissions of persons of that trade. The total number of admissions being 43,000, the deaths from phthisis were 1554, or about 1-28th of the admissions.

The first fact he deduces from his statistical details is that phthisis is much more common among females than among males. Of the 1554 deaths 745 were men, and 809 women; while of the admissions 26,055 were men and 16,955 women; so that the proportional deaths from phthisis relatively to the admissions are 28.5 per thousand for men, but 47.5 per thousand for women. This important fact has also been established by the researches of *M. Louis*, who has published a paper on the subject in the same number of the Annales d'Hygiène, and who says, that for every seventy deaths among men in the Parisian Hospitals there are ninety-two deaths among women.

There is no class of artizans more generally believed to be subject to phthisis from the circumstance of their trade than those who are exposed to inhale the dust of vegetable, mineral, or animal matters. But if the researches of M. Benoiston de Chateauneuf are to be trusted, we entertain very exaggerated notions on the injurious tendency of this cause. Dividing artizans of this class into three divisions, he considers first those who are exposed to vegetable dust, comprehending starch-makers, bakers, charcoal-men, grain-market porters, thread-makers, cotton-spinners, and rag-pickers. In these trades conjunctly the deaths from phthisis in relation to the admissions are 21 per thousand; and in each trade the proportion is as follows: Rag-pickers, men 8, women 17,—starch-makers 10,—cotton-spinners, men 19, women 27,—bakers 21—thread-makers, men 23, women 34,—grain-market porters 24,—and charcoal-porters 37 per thousand. As the proportion for all trades is 28.5 per thousand for males, and 47.5 for females, it is obvious that none of these trades expose the artizans to phthisis except that of charcoal-porters. The next division of the same class comprehends quarry-men, masons, marble-workers, plasterers, and stone-cutters, whose trades expose them to the dust of mineral substances, and have long and generally been believed to be on that account extremely injurious to the lungs. Our author, however, arrives at the singular and unexpected conclusion, that artizans of this division are less exposed to phthisis than the general average of workmen. Among the stone-cutters the deaths from phthisis are only nine in every thousand admissions,—among marble-cutters 12.5,—quarry-men 14.5,—masons 22,—plasterers, 25;—and the average of the whole is 19.5. These facts, however, will not bear out M. Benoiston in his conclusion, that mineral dust does not in any circumstances engender a disposition to phthisis; for in this part of the country it is perfectly well ascertained that hewing masons, who work on a very hard compact, quartzy sandstone, are all short-lived,—extremely few living to the age of fifty, and the common cause of death being phthisis.

The last division of the present class comprehends those whose trade exposes them to the dust of animal substances. These are brush-makers, carders, mattrass-makers, hat-makers, and feather-workers (plumassiers.) Here M. Benoiston discovers in the hospital records, satisfactory evidence of a strong disposition to phthisis. The total number of persons belonging to those trades was 1434, so that the results now to be mentioned are founded on a tolerably large induction. Among carders and mattrass-makers the deaths are 31 per thousand of the admissions,—among brush-makers 35,—among hat-makers 48,—among feather-workers so great as 80;—and the average of the whole is 44.5 per thousand.

The second class of workmen believed to be exposed to phthisis are those who breathe habitually an atmosphere impregnated with noxious vapours. The only trades of this nature which the author has been enabled to bring fully under his cognizance are gilders, decoration-painters, and smoke-curers; among whom the deaths from consumption are 53, 22, and 33.5; so that the gilders are a good deal exposed to the risk of phthisis, the smoke-curers also more than the average, but painters not at all.

It is very remarkable that in the trade, in which the prejudices of this country would lead us to look for the greatest disposition to phthisis,—that of washermen and washerwomen, who work chiefly in the open air and with the whole body, but especially the lower extremities much exposed to wet,—there is actually not a greater risk than in trades generally. Among washermen the deaths from phthisis are 18, and among washerwomen 45, the former being considerably under the average, the latter nearly the general average.

Of late, says M. Benoiston, there has been a disposition to ascribe a phthisical tendency to those trades in which the arms and chest are habitually exercised with violence. How far this suspicion is true will appear from the following data. Among locksmiths the deaths from phthisis are 7.5 per thousand,—among blacksmiths and farriers 9,—log-sawers, and stone-sawers 11,—carpenters 15,—weavers, men 21, women 18,—water-carriers 24,—cabinet-makers 31,—gauze-workers, men 32, women 31.5. None of these trades therefore particularly dispose to phthisis, except that of cabinet-maker and gauze-worker.—But in the trades hitherto mentioned as subjecting the individuals to habitual and violent exercise of the arms and chest, there is an advantage enjoyed of which other trades similarly subjected are deprived: the body is either erect, or the posture is frequently changed. The following data will prove, that where the trade unites the two evils of a sedentary, bent position, and much exercise of the upper extremities, the disposition to phthisis is greatly increased. In fact it is these professions chiefly which give rise to the deaths from phthisis in the Parisian hospitals. Among males exercising such trades, the deaths for every thousand admissions are as follows: shoemakers 43,—polishers 44.5,—lace-fringe-makers 47,—tailors 47,—clerks 47,—crystal-cutters 61.5,—and jewellers 64. In female trades of the same kind we find the deaths among polishers to be 38,—tailors 46,—fringe-makers 47,—mantua-makers and milliners 55,—shoe-binders 55.5,—botchers and menders 61,—lace-workers 62,—glovers 64.5,—embroiderers 86,—artificial flower-makers 115,—jewellers 133. We see here explained the source of the immensely greater prevalence of phthisis among females than among males. In fact the trades now mentioned include five-eighths of the total admissions among females, but very little more than a fifth part of the total admissions among males.

MEDICAL THERAPEUTICS.

Operation of various Medicines on the healthy body. (*Archives Gén. de Méd. Mars et Mai* 1831.)—In several numbers of the Journal now quoted is contained a notice of a set of experiments performed at Leipsig on the action of several important medicines on the healthy body. The sketch is taken from a work of which we shall probably soon give a more detailed account, the *Materialien zu einer Künftigen Heilmittellehre* of Professor Jörg of Leipsig. The experiments were made on twenty-two physicians and medical students between the ages of twenty-one and forty-five, two boys, the one fourteen, and the other sixteen years old, and three females, one twelve, another eighteen, and the third forty-five years of age. The following is a very brief statement of the principal results.

Nitre.—Eight members of the Therapeutic Club took twice a-day doses gradually increased from fifteen grains to a drachm. The effect was excitement of the kidneys, intestinal canal, and skin. The sensation of coolness felt in the mouth, gullet, and sometimes the stomach, on taking a solution of nitre, is speedily followed by a state of reaction, accompanied by increase of the pulse. It is therefore not an antiphlogistic, as some physicians imagine. It ought to be proscribed in all inflammatory affections of the alimentary canal or genito-urinary system; neither is it a proper remedy in cutaneous diseases, except to produce derivation to the kidneys or intestines. As a purgative it ought to be altogether abandoned, since we possess many safer and more certain medicines of this class. As a diuretic it may be admissible in some acute dropsies, but in general it is an ineligible diuretic, for other remedies of the same class are more powerful and safe, and do not disorder digestion, as nitre does, when long continued. The best effects are to be procured in inflammation of the brain or its membranes, or of the throat, or even of the chest also. It is an emmenagogue, according to the experiments made with it on the females of the club.

Cherry-laurel water.—The article made use of was prepared according to the Saxon Pharmacopeia, by distilling three pounds of liquid from a mixture of six pounds of water, one ounce of rectified alcohol, and one pound of fresh laurel leaves chopped down. Twelve members of the club took it in doses progressively increased from five drops to twenty-five, and finally 112 drops. Its whole action appeared to be concentrated on the brain, the symptoms being weight in the head, sleepiness, torpor of the intellectual functions, general lassitude and feebleness of the limbs, retardation of the pulse, answering in degree to the amount of the headach; and this state is preceded by dull and pungent pain in the head, chiefly in the fore part, in the region of the optic nerves. The pathological cause of all these symptoms appeared to M. Jörg to be turgescence or plethora of the blood-vessels of the head. It likewise produced unpleasant tickling in the larynx, cough, and an increased secretion of the tracheal mucus, enduring sometimes for several days, and constituting an attack of slight bronchitis. Hence he infers, that cherry-laurel water is contraindicated in inflammation of the brain and lungs, and in the first stage of scarlatina and puerperal fever,—in the two last diseases by promoting determination to the head. By its secondary action in lessening nervous sensibility and retarding the circulation, it may be useful in inflammation of the abdominal viscera, or organs of generation, or in inordinate excitement of these organs without inflammation. It is contraindicated, he further conceives, in spasmodic affections where the cause is excitement of the brain, or turgescence of its vessels. This is rather an interesting commentary on the present indiscriminate use of the compounds of prussic acid by several Parisian and London physicians. M. Jörg has found that the cherry-laurel-water, like the other forms of prussic acid, is rapidly decomposed,—and likewise that its effects on different people are very different in degree. Bitter-almond water, though stronger in taste and odour than cherry-laurel water, is less active and more uncertain in its physiological effects. The effects of pure prussic acid are similar to those of the cherry-laurel water.

Valerian.—Experiments on this substance were made by the greater number of the members of the club; and it was taken in infusion in the dose of from two to eight drachms in four ounces of water, or in powder in the dose of half a drachm or a whole drachm, or in the form of tincture in various doses. Sometimes no effect at all was manifested; sometimes it acted on the brain; and sometimes on the alimentary canal. When the brain was acted on, excitement was first remarked, being indicated by serenity and disposition to liveliness and business; then slight congestion followed, as was shown by the sense of weight in the head; but there was never prostration, somnolency, or torpor, as after other medicines which have the same action. When the alimentary canal was acted on, eructations were produced, a sense of fulness in the stomach, inappetence, flatulence, colic, and tenesmus, and sometimes nausea, with a bitter, bilious taste. Valerian likewise quickens the circulation, though moderately. *M. Jörg* farther remarked that the action of half a drachm continues four hours, that of two drachms twelve hours,—that the action on the stomach is most easily induced by the powder, and that on the brain by the infusion,—and that the disagreeable taste of the infusion passes away quickly, while that of the powder remains several hours. He concludes from his experiments, that valerian may be useful in supporting the strength whenever inflammation is not present; but that it is contraindicated whenever there is congestion in the head or abdominal viscera.

Serpentaria.—Ten members of the club tried the effects of serpentaria in the dose of from two to five scruples infused in four or eight ounces of water, and likewise in the form of powder in the dose of fifteen grains or one scruple. The result was that it excites the intestinal canal, produces determination to all the abdominal viscera, and occasions flatulence rather than increased mucous secretion. The usual symptoms were eructations, nausea, vomiting, pains and weight in stomach, borborygmus, colic, discharge of wind downwards, tenesmus, loss of appetite, tympanitic distension, and itching at the anus. Sometimes too it produced a sense of heat, weight, and pain in the head, and at other times excitement of the circulation, or increased urinary secretion. Its effects last from eight hours with small doses to twenty hours with large doses. It is therefore a remedy which can only be useful when the physician wishes to rouse the oppressed vitality of the alimentary canal; hence in particular it may be useful in colliquative diarrhœa, not connected with inflammation, as it tends to diminish the secretion of mucus.

Flower and root of Arnica.—1. *The Flower,* in the dose of from two and a-half to thirty-six grains infused in from one drachm to six ounces of water, was taken by thirteen individuals. It produced much irritation in the whole alimentary canal from the mouth to the anus, particularly in the gullet, stomach, and small intestines, and especially in the muscular system of these parts,—exciting rather increased contractions than increased secretion. It likewise excited the brain, probably through sympathy with the excitement of the intestines; and a distinct acceleration of the pulse, increased transpiration, and various modifications of the urinary secretion, were also observed as its secondary effects. Its action lasts from twenty-four to thirty-six hours. One or two grains will be found a sufficient dose, and it should not be repeated oftener than once a-day. The therapeutic conclusions are, that the flowers of arnica may be useful in general or local debility of the intestines, brain, or locomotive organs, but are contraindicated when there is irritation or inflammation of the intestines, or congestion in the brain. Externally, an infusion in eight parts of water caused hot itchiness of the skin without redness; and the flowers themselves also produced redness in eight hours without affecting the cuticle subsequently. Hence they appear to be useful rubefacients of the mildest kind.—2. *The Root* affects the muscular coat of the alimentary canal and the brain more powerfully than the flowers; and hence Professor Jörg thinks it may be useful in chronic or colliquative diarrhœa, without inflammation, where the object is to strengthen the intestinal canal without augmenting its mucous secretion.—Besides the effects hitherto described, both the flower and root have appeared to have a powerful effect in stimulating the absorbent vessels, and may be really useful, as they have been conceived by some physicians to be, in promoting the removal of indurations of various organs. In this respect they have some analogy to calomel in action; but they have a greater tendency to excite inflammation.

Camphor.—This substance was sometimes taken in powder in the dose of half a grain, and from that to twelve grains,—sometimes in the form of tincture in the dose of half a grain, and from that to four grains. The result was, that camphor stimulates directly the brain and alimentary canal, and indirectly the urinary organs, the skin, and the organs of circulation. The effects on the brain were very different in degree on the different individuals who tried it, just as holds with alcoholic spirits,—some experiencing much excitement, and being then thrown into profound sleep, and others remaining free of any cerebral disturbance. It increases the heat of the body in all, and often produces sweating; it accelerates and strengthens the pulse, modifies the quantity and composition of the urine, and excites actively the organs of generation. Camphor is therefore contraindicated in acute inflammatory fevers, in irritation of the urinary organs, however contrary this principle may be to the usual therapeutic creed of physicians, and in every state of the cerebral system where congestion either exists or is dreaded. It is indicated in diseases of debility, and as it does not produce visceral congestion in the abdomen like valerian or arnica, it should be used in preference to these drugs in tympanitis and colliquative diarrhœa, not connected with inflammation. The dose should be from half a grain to one grain or upwards. The effects of each dose go off in four or six hours.

Castor in the dose of twenty grains produced in all who tried it disagreeable eructations, but no appreciable effect on any system of organs, and in small doses it had no effect of any kind. Professor Jörg therefore concludes that it may be erased without detriment from the list of the materia medica.

Musk was taken by nine people in doses varying from two to fifteen grains. It appeared by no means so diffusible a stimulant as is generally supposed. It powerfully excites the alimentary canal and the brain, producing eructations, sense of weight in the stomach, sometimes diminution, sometimes increase of appetite, and dryness in the throat,—also weight in the head, dull headach and giddiness. The secondary effects on the brain are more prominent,—the symptoms being yawning, somnolency, depression, sense of weight throughout the whole body, and finally deep, prolonged sleep. When the dose is large, trembling and even slight convulsions of the limbs occur. Farther, it excites the circulation, rendering the pulse fuller and more frequent. It never produces, as is commonly thought, its peculiar odour in the sweat, urine, or other secretions. His experiments lead the author to infer, that musk can only be used in debility of the brain and nervous system, when no congestion is present,—but that it is not so appropriate a remedy in extreme nervous debility as is commonly conceived, since the stimulus it produces is followed by a corresponding collapse. We conceive Professor Jörg might have therefore added, that, when to these objections is added its enormous price, it may with great safety and no great loss accompany Castor, and take its departure from the modern materia medica. Three or five grains he found a sufficient dose. Its effects cease in eight or twelve hours.

St Ignatius Bean.—From half a grain to four grains of the powder of this species of *strychnos*, or from nine to ninety drops of a tincture made with eight ounces of alcohol and one ounce of the bruised seeds, produced ptyalism, nausea, weight and pain of epigastrium, increase or loss of appetite, eructations, borborygmi, colic, constipation, or purging, and heat or itching round the anus. Its secondary effects were weight in the head, giddiness, dull pain of hindhead, forehead, and temples, pain and inflammation of the eyes,—and finally much prostration, somnolency, and apathy, with sometimes increase of pulse, and a sense of creeping and pricking in the urethra. *These effects disappear and re-appear several times.* From his observations Professor Jörg recommends it in weakness of the stomach and intestines, especially when attended with induration of the mesenteric glands, provided the patient is not of too irritable a habit,—in all diseases of a periodic character as a powerful alterative,—and in atony of the *centrum nervosum*, as well as weakness of sight. The dose at first should be half a grain of the powder once a-day, and it may be afterwards gradually increased.

Assafœtida in a dose varying from one to fifteen grains stimulates the alimentary canal, particularly the gullet, stomach, and small intestines. Secondarily, it produces cerebral congestion, indicated by dull pain in the crown of the head, the forehead and the eyes,—also excitement of the circulation and respiration,—and likewise strong excitement of the genito-urinary organs. Hence its use in indolence of the digestive organs he considers well-founded; but he is inclined to doubt the propriety of its almost universal use in hysteria and hypochondriasis, when depending on irritation of the uterine or abdominal organs. It is usually given in too large doses and too often; from half a grain to one grain he generally found sufficient, and its effects lasted often till the second or even third day.

Foxglove in a dose varying from half a grain to three grains excites directly and powerfully the brain, the alimentary canal, and the genito-urinary organs; and its secondary effects are directed on the circulation, which it depresses. Its operation on the brain is indicated by intoxication, weight in the head, giddiness, dull headach, warmth of the face and obscurity of sight; its operation on the alimentary canal by a sense of heat and excoriation in the pharynx and gullet, colic pains, and sometimes increase, sometimes decrease of appetite and of the alvine discharges; its operation on the urinary organs by a remarkable increase in the secretion of urine, observed in every individual but one, and attended sometimes by diminution, sometimes by increase of its colour; its operation on the genital organs by remarkable itchiness of the glans, erections, and pollutions, and in females by symptoms exactly resembling those which precede the menstrual discharge. The consecutive effects are marked depression of the circulation, indicated by feebleness and smallness of the pulse; which, however, are always preceded by excitement.—From these interesting results, the author concludes that this powerful drug is far from being an appropriate antiphlogistic remedy;—that it is contraindicated in hooping-cough, acute hydrocephalus, and all dropsies connected with inflammation of the serous membranes—diseases in which it is prevalently used; but that it is signally useful whenever the object is to stimulate the urinary organs to increased secretion, especially when that function is languid. He farther questions the propriety of its employment in diseases of the heart, as its depressing operation must prove hurtful in many and useless in most of them. The dose should be from a quarter of a grain to a grain of the powder, and when its action has commenced, the dose should not be repeated oftener than once every twelve, twenty-four, or forty-eight hours, as its effects often continue thus long. In unnecessarily large doses he is inclined to think it may tend to induce an inflammatory state of the urinary organs and consequently diminution, instead of increase of the seretion of urine.

Account by a Physician of the successful treatment of Empyema by Paracentesis in his own person. (Journal der Praktischen Heilkunde, Januar. 1831.*)*—The following is one of the most interesting and extraordinary cases of empyema which has come under our notice. It is related by the patient himself, *Dr Wendelstadt* of Hersfield, a well-known physician, whose name is a sufficient warranty for the accuracy of the facts. We regret that our limits prevent us from transferring the narrative to our pages in his own words.

In the year 1810, and in the 23d year of his age, Dr Wendelstadt, who had commenced the practice of his profession a year previously, was attacked with pleurisy, which he did not pay particular attention to, but treated as an attack of rheumatism. By-and-bye he was annoyed by a constant sense of heat and oppression in the right side, where the inflammation had existed; he was unable to lie on the left side for difficulty of breathing; and frequently in the night time was for the same reason obliged to assume the sitting posture. He had at the same time constant pain at the point of the shoulder, soreness in the windpipe and larynx, convulsive cough with difficult mucous expectoration, and a slow fever, which gradually put on the form of hectic. Notwithstanding his incessant sufferings, however, he recovered strength so far in the course of six months that he was able laboriously to follow his profession. Not long afterwards he consulted a medical friend who found the ribs of the rigbt side protruded, the whole right side motionless on respiration, but the intercostal spaces not protruded. Those who question the utility of the stethoscope and the pathological researches of Laennec, will perhaps acknowledge that something at least has been added to the certainty and facility of our diagnosis in diseases of the chest, when we state that in the year 1811 Dr Wendelstadt's friend inferred from the symptoms that his disease was either thickening of the pleura and adhesion of the lungs to the parietes, or effusion. Various remedies were fruitlessly tried. But the doctor continued to practise his profession, custom having rendered his sufferings supportable. Meanwhile the circumference of the chest continued to increase, climbing produced excessive dyspnœa, at length the presence of a fluid in the chest became evident by the sense of fluctuation, which was produced whenever the chest was agitated, and this was remarked first in the right side only, but afterwards as the enlargement increased, in the left also. About this time he was much annoyed by a singular affection, an uneasy feeling in the affected side when he went into warm air, which seemed to him to arise from the fluid within the chest not coming to an equilibrium of temperature with the surrounding medium so quickly as the parietes did. An operation was now proposed as the only means of relieving him. But he confesses that the accounts of recorded cases were not very encouraging; and therefore he continued to toil at his professional employment and to struggle with his misfortunes,—"being supported," says he, "by his originally strong constitution, his cheerful temper of mind, his happy matrimonial connexions, the consciousness of doing his duty to the best of his ability, and resignation to his fate."

At last in June 1817, he sustained a fresh attack of pleurisy, which terminated in increase of the effusion and difficulty of breathing, with extreme wasting, delirium, and other symptoms of an approaching termination to his sufferings, when he resolved to submit to the operation of paracentesis in the hope of at least preserving himself a little longer for his family's sake. This was seven years after his disease began. The incision was made between the sixth and seventh ribs, when a milky-coloured fluid rushed forcibly from the tube of the trochar. When half a quart was discharged the opening was closed up, after which he felt prodigiously relieved, slept soundly and awoke refreshed and lively. Next day a third of a quart was twice withdrawn; and on the third day as much more. He thinks, however, that the fluid was withdrawn in too large quantity; for he was immediately seized with impending suffocation, and continued in that state for twelve hours, the nails of his fingers being all the time livid, and his strength completely exhausted. Diffusible stimulants roused him from this alarming state; but it was followed by an insidious fever, œdema of the limbs, and painful hemorrhoids. On the fourth day the fluid was thicker in consistence and fetid; and it continued more or less fetid for a fortnight. After that it was allowed to flow at each dressing as far as it would; and it became thick, white, and viscous. The fluctuation in the right side had ceased. It was now agreed on to try the effect of gently astringent injections together with the introduction of tents; but in six weeks no change of consequence was effected on the state of the chest. The œdema, however, was carried off by an incidental diarrhœa; in eight weeks he was able to go about the house, and in four weeks more to see his friends. The injections were then abandoned as useless and annoying,—the injections of oak-bark decoction in particular having always excited rigor of several hours' duration followed by heat of skin, quick pulse and thirst, and finally by a sweating stage. In no long time he resumed his professional occupations, though still extremely feeble, and constantly exposed to fresh accessions of pain and fever from accidental exposure to cold.

In this manner he has now lived thirteen years; during which time the fluid has been daily withdrawn twice,—sometimes half a drachm only issuing each time, sometimes so much as three or four ounces daily. During that period he has sometimes passed an entire half year without any uneasy feeling in his chest or any other complaint but general weakness; but he has had frequent attacks of pain in the chest and feverishness, attended with increased discharge. Three years ago he could not help gratifying his curiosity to know how large the cavity in his chest was, and on injecting warm water he found it held a quart without his feeling any inconvenience. He has never had any irritation in the lungs since the operation, although he is convinced there is a communication between the right lung and the cavity, because when he draws in his breath and squeezes, as if at stool, he distinctly hears a hissing or whistling within the chest, and if he does this while in the bath bubbles of air escape from the aperture, which he can keep up as long he pleases.

His present state is as follows, in the author's own words. "My complexion is fresh, my eye lively, my muscles weak, but my body not thinner than when I enjoyed perfect health in my early years. My appetite, digestion and sleep are natural. Deep inspiration, a forced cough, or lying on the right side, excites pain in the aperture, and I lie best on the left side or on the back. The right side of the chest does not move at all when I breathe; yet I can blow the flute as well as another, and can walk faster than many people who are in perfect health. The right side is bent inwards, the right shoulder depressed, and the whole right side of the body weaker and less muscular than the left. I have no cough. Every time the dressing is changed I can by quick contraction of the chest blow out air from the aperture with such force as to extinguish a candle held at the distance of four or six inches. The discharge amounts to two ounces per day; it is purulent, brick-coloured, with occasional streaks and clots of blood; and it has the odour of milk. Fourteen days ago an exfoliated piece of rib half an inch long and two lines broad came away by the aperture, after some previous feverishness and pain in the neighbourhood. As to my state of mind, my long years of suffering have I think, weakened my memory; but my judgment, serenity of disposition, and self-possession, when beside my patients, have sustained no diminution.

SURGICAL PATHOLOGY.

On Inflammation of the Medullary Tissue of the long Bones (Archives Gén. de Méd. Juin 1831.*)*—*M. Reynaud* of Paris, the author of a paper which has just appeared with the preceding title, professes to have taken up the subject not so much with the view of giving a full treatise on it, as for the purpose of calling the attention of surgeons to a disease apparently of great frequency, and probably of much importance as the sequela of operations on the extremities. The reader may conceive the consequence attached by M. Reynaud to a thorough inquiry into all its relations, when it is added that in one of the great hospitals in the course of two years every case of amputation of the thigh proved fatal, and in every instance was inflammation of the medullary tissue of the remaining part of the thigh-bone found after death either singly or in conjunction with other morbid appearances.

The cases he has brought forward in illustration of the general principles which will be presently stated are five in number; for, with a considerate attention to his reader's leisure and patience, not often met with among French pathological writers of the present day, he informs us that the numerous additional cases he might have likewise detailed would not enable him to go further in his inferences, or to explain better the phenomena of the disease than the examples which he has published, and of which we shall communicate the following short analysis.—*Case I.* The first he considers an illustrative example of the inflammatory state of the medullary tissue in its lowest degree, such as is necessary to the production of callus on the end of the divided bone after amputation. The patient was a young man, whose arm was removed by *M. Roux* on account of extensive disease of the elbow-joint. The operation was short, two ligatures only were applied, the stump next morning had healed by the first intention, and in a short time the ligatures came away and cicatrization was completed. The patient nevertheless continued languid, depressed and feverish; in a few days the left thigh and leg became painful, and doughy; the right knee then became enlarged and obviously contained fluid; the fever in the meantime increased, and dry tongue, total prostration, and slight delirium ushered in death. On dissection there was found great serous infiltration of the left thigh, a little pus at the upper part of the tibia, the saphena vein thickened and red and containing pus, the crural vein obliterated by a clot resembling in colour and consistence thick chocolate; purulent effusion into the right knee-joint with redness of the synovial membrane; bloody injection of the dura-matral arachnoid with a very thin layer of purulent-like effusion, and serous infiltration of the pia mater; a fatty state of the liver. On examining the stump, the cicatrix was found firm, except at a small point only; a semi-fibrous layer rested on the end of the bone, firmest next the bone, and forming a plug over the medullary canal; around the edge of the bone a ring of bony matter was formed, and a smaller bony ring was also formed on the edge of the medullary canal; almost the whole medullary membrane of the bone was of a reddish-brown colour; the periosteum was healthy; clots of blood were found in the subscapulary veins where they end in the axillary vein; but the other veins, as well as the artery, presented a natural appearance.—*Case II.* The next is an instance of inflammation of the crural vein after amputation of the thigh, where the medullary tissue was found in a state of more advanced inflammation. The particulars of the case before death are not given; it is merely observed that amputation was performed on account of a chronic disease of the knee-joint, and that the patient died in thirty days. On dissection there was found thin effusion of flaky pus on the arachnoid; numerous purulent points dispersed throughout the substance of the brain; a few tubercles in the lungs; a purulent cavity in the spleen; the crural vein of the stump inflamed; the end of the bone denuded of its periosteum to a short distance upwards; the medullary tissue inflamed and purulent as high up as the separation of periosteum externally, and a considerable portion of the rest of it redder, denser, and less oily than natural.—*Case III.* This is an extremely interesting example of advanced inflammation of the whole medullary tissue of the bone. The patient, a lad 16 years of age, had a curved leg and slight disease of the knee-joint, and, together with his parents, insisted on having amputation performed to rid him of the incumbrance, although the surgeons of the hospital were averse to it. *M. Boyer* therefore amputated the limb at the usual situation above the knee-joint, and dressed the stump in the old French method. Everything went on prosperously till the sixth day, on the morning of which M. Reynaud found him sitting in bed making caddis; but in the evening the countenance became yellow; delirium ensued during the night and also diarrhœa; on the ninth day, the upper part of the thigh was much swelled, and on squeezing it pus flowed profusely from the wound; acute pain in the stomach, hurried respiration, a short cough, fever, increased yellowness of the skin, and yellow tinging of all the secretions rapidly followed; and death took place on the tenth day. On dissection, the dura mater was found yellowish, and covered internally with a thin layer of lymph; a sero-purulent fluid was effused into the left pleural cavity; and the lungs were inflamed and infiltrated with pus. The veins proceeding from the stump were inflamed and contained pus as high up as the iliacs; the muscles near the flaps were infiltrated with a sero-gelatinous fluid; the periosteum was detached from the bone as high up as the greater trochanter; the bone was yellowish and surrounded by pus. The medullary tissue was inflamed and in a state of suppuration up to the very termination of the medullary canal.—*Case IV* Is an instance of extensive inflammation of the medullary tissue, without any other material diseased appearance in the body. Amputation of the thigh was performed by *M. Roux* on account of an old inveterate disease of the knee-joint; the stump was dressed so as to heal by the first intention; and for fifteen days nothing occurred to disturb recovery. But then the stump became painful, the patient complained of the dressings being always too tight, and was very restless; subsequently strong fever set in, the breathing became frequent, and death supervened, without any particular symptom referable to the stump, except increasing and extreme tenderness, with diminution of the discharge. The appearances found on dissection were confined to the limb operated on. The soft parts were united except at one point, where there was an opening down to a purulent cavity round the end of the bone. The bone was denuded of its periosteum two inches up in front and half an inch higher behind; above this it adhered to a thin layer of recently-formed bone; and still higher it was still connected with the original bone, but more loosely than usual and without any appearance of uniting vessels when it was stripped off. The extremity of the medullary tissue formed a brownish-white, spongy mass, infiltrated with pus and plugging up the cavity in the bone; above this plug there was a purulent cavity extending as high as the level of the trochanter,—the pus lying in contact with the bone posteriorly, but separated from it anteriorly by a layer of tissue infiltrated with pus; and the cavity communicated outwardly by a small aperture. The cells of the spongy tissue of the bone above the medullary cavity were lined by a deep red membrane and filled with pus. The pus was every where very fetid. The substance of the bone was unusually thick in front and thin before; its outer surface, instead of being smooth, shining, moist and slightly rosy, was dry, white and dull; and its texture, as seen when it was broken across, appeared unusually white, and presented none of the red spots which are seen in a healthy bone after the laceration of its connecting blood-vessels.—*Case V.* Is a similar instance of very extensive and advanced inflammation of the medullary tissue, united with various other morbid appearances. Amputation was performed on account of white swelling of the knee-joint. An attempt to heal the stump by the first intention failed, and profuse suppuration took place; but methodical compression gradually produced almost complete union. From the second day, however, violent fever set in, cough with thick expectoration followed, diarrhœa next appeared, and then yellowness of the skin before death. On dissection the dura mater was found yellowish in colour and lined internally by a pseudo-membranous effusion; the left lung in the incipient stage of carnification, the right much gorged, and a purulent cavity at its base; and the pericardium containing some serum and a thin layer of lymph on both its surfaces. The flaps of the stump adhered partially. There was a purulent cavity at the end of the bone. The femoral artery contained pus towards its divided extremity. The femoral vein was throughout its whole course thickened, surrounded with brittle cellular tissue, lined with a pseudo-membrane internally, and filled with pus. The end of the bone was denuded of its periosteum to a short distance upwards, and the rest of this membrane was more easily stripped of than usual; but the surface and internal structure of the bone, except just at its extremity where the periosteum had been separated, was of the natural smoothness and redness. The lower end of the medullary tissue was prominent, black, and purulent, and it was in a state of fetid suppuration throughout the whole cavity of the bone.

In the general summary with which M. Reynaud concludes his paper, he observes that the frequency with which inflammation of the medullary tissue has been met with in the long bones after amputation, shows that there is some connexion between the disease and the injury done to this tissue by the saw; and he therefore throws out the hint whether it is not advisable to use some precautions for rendering the incision through the cavity of the bone smoother than it is commonly made, and likewise to cover it more closely with the soft parts of the flap. He considers himself justified in inferring from his cases, that the stripping of the periosteum from the bone is produced by an advanced state of inflammation of the medullary tissue, and that the extent of the one is generally conformable with that of the other. He is not satisfied he is yet able to point out the symptoms of the disease he describes, but says he would be inclined to suspect it wherever there is general doughiness of the stump without external redness or other signs of inflammation,—when a large quantity of matter may be squeezed out of the stump, which cannot be accounted for from the extent of the remaining sore,—when there is acute, deep-seated pain, felt during the first dressings, and accompanied with extreme tenderness of the stump,—and when there is yellowness of the stump, acidity of the breath, and general fever.

There appears little doubt that the subject of the author's paper has not hitherto been sufficiently attended to by surgeons, and is deserving of more notice. Some allusion to it has been made by *M. Ribes* in the article Necrosis in the Dictionnaire des Sciences Médicales, and more lately by *M. Blandin* in the article Amputation in the Dictionnaire de Médecine et de Chirurgie Pratiques.

TOXICOLOGY.

Physiological Effects of various Poisons not previously examined, (Horn's Archiv für Medizinische Erfahrung, September and October 1830.*)*—The experiments we are about to relate, which are in many respects interesting, have been lately performed by *Professor Hünefeld* of Greifswalde. The substances experimented on were maganesic acid, carbazotic acid, cyanous acid, cyanogen, and phosphorous acid.

Maganesic acid is the acid which forms with potass the solution familiarly known by the name of mineral chamelion. Professor Gmelin of Tübingen ascertained, not long ago, the effects of the salts of manganese on the animal body, and arrived at the singular result, that where the sulphate is injected into the veins, it produces an extraordinary increase of the biliary secretion, and an inflammatory state of the liver, (see this Journal, xxvi. p. 138.) Professor Hünefeld has found, that analogous effects are produced by the manganesic acid on the liver, but that it is a very feeble poisons, if indeed it can be properly called a poison at all. He gave a rabbit from ten to fifteen grains several times a-day, till in three days it had taken nearly two drachms; but no effect was remarked, except slight increase in the secretion of urine. The animal being then killed, the peritonæum was found coloured grayish-green, the great intestines of a similar colour, the stomach and small intestines natural, the lungs, heart, and kidneys natural, except that the heart, as well as the voluntary muscles, were rather more easily torn than usual. The outer lobe of the liver was partly bright red, partly deep brownish-red, and at some points of the colour of boiled liver, and easily indented. When the liver was incinerated, the ashes gave unequivocal indications of the presence of manganese. In the other organs, and in the blood, no such indications were to be found.

Carbazotic acid is procured during the action of nitric acid on indigo, and derives its name from its composition, as it is a compound of carbon, azote and oxygen. Professor Hünefeld has found, that dogs and rabbits sustain no harm from doses of fifteen, twenty, and even thirty grains; and he consequently concludes that it is not poisonous.

Cyanous acid appears to be not poisonous. A rabbit got first five and then twenty grains of the cyanite of potass, without any appearance of suffering. Twenty grains of the same salt decomposed by phosphoric acid had also no effect whatever. And in like manner, when the same quantity, decomposed by the supertartrate of potass, was administered, no perceptible effect ensued. This substance, therefore, appears in relation to its operation on the animal body to belong to the same class as the sulpho-cyanic and ferro-cyanic acids, which are either not poisonous at all, or very feebly so, and differ in that respect most materially from cyanogen itself, and its other well known compounds.

Cyanogen.—Professor Hünefeld conceives that no experiments have yet been made on the physiological properties of this gas. But here he is mistaken. *Coullon* ascertained some time ago that it is very poisonous to all the lower animals, in whom it produces sometimes pure coma, sometimes convulsions also (Journ. Universel. des Sc. Méd. ii. 240;) and *Drs Turner and Christison* ascertained, that in very minute quantity it acts powerfully as a narcotic on plants, (Edin. Med. and Surg. Journal, xxviii. 363.) The experiments of Hünefeld are confirmatory of the results now mentioned. He placed a rabbit in a pneumatic trough, into the bottom of which the gas was introduced, while the top was covered by pasteboard. In a few minutes it became restless, and breathed anxiously; in four or five minutes slight convulsions supervened, feces were discharged, the tongue was protruded, the eyes became stiff, and the pupils dilated; and the animal threw back its head and appeared stupified. In the course of five or six minutes it uttered some cries and expired. Being then removed into the open air, it was found impossible to effect resuscitation. When the body was examined, the eyes were found unusually glistening, the muscles flaccid, the abdomen distended and tense, the stomach, intestines, liver, heart, and lungs healthy, the brain healthy, and not gorged; and there was not any perceptible odour of cyanogen gas.

Phosphorous acid.—Twenty-five grains of this substance carefully prepared were administered to an adult rabbit. For an hour it appeared a little restless, and would not eat, but soon afterwards it became apparently quite well. In twenty-four hours a drachm was given diluted with a little water; after which the breathing became speedily difficult, and in the course of fifteen or thirty minutes the animal was restless and anxious, yet averse to motion. In ten or twelve hours it vomited a sanguinolent fluid, and then expired in slight convulsions. The villous coat of the stomach was brownish-red near the cardia alone. There was very little phosphorous acid in its cavity; but its contents had a strong acid re-action, owing to the presence of muriatic acid. The abdomen and other bowels were quite healthy, as also the liver and bile, which did not contain any of the poison. The lungs and heart were gorged with blood, the spleen also gorged and very red, the brain natural, the kidneys natural, and without acid re-action. Nowhere was there any smell of phosphorus. The urine was strongly impregnated with phosphoric acid, as appeared from the action of ammonia and sulphate of magnesia. The uterus was very red, and in the vagina a bloody fluid was found. Hence, this substance appears not to be a very active poison, and to operate not so much by irritating the alimentary canal as by inducing some remote effects. It is not improbable that it possesses the special property of irritating the uterine system.

Case of Poisoning with Acetate of Morphia. (Journal de Chimie Medicale, Mars 1831.)—An instance of poisoning with acetate of morphia has been already mentioned in this Journal. The following is an additional instructive case, lately described by *M. Castara*, surgeon to the Civil and Military Hospital of Lunéville. A young man, of sound constitution, swallowed first ten grains of acetate of morphia, and in ten minutes forty grains more in powder. The first dose produced a little vivacity before he took the second. In five minutes he felt general feebleness, his knees bent under him, and he experienced a sensation as of approaching death. He then confessed to his friends what he had done, and immediately became insensible. About fifteen minutes after the commencement of the action of the poison M. Castara was summoned to him, and found him motionless, insensible, almost indeed comatose, breathing forcibly, with the limbs in an extreme state of relaxation, the countenance livid, the lips violet, the jaw not locked, the eyelids half open, the eyes motionless, the pupils contracted, the pulse full, frequent, and hard, the skin warm and perspiring, the abdomen not distended, and deglutition impossible. After an ineffectual attempt to administer tartar-emetic, venesection was performed at the arm, and about eighteen ounces of blood were withdrawn. Immediately the patient started up, as if out of sleep, asked where he was, and what was wanted with him, rubbed his hand over his eyes, said every thing was turning round about him, and although he observed the light of a candle, could not distinguish the individuals present. He seemed astonished when named, and much displeased when he learned he had been bled; but when questioned on the subject he was able to give a detail of what he had done and felt previously to becoming insensible. Whenever he was left to himself he fell into a calm slumber. He did not complain of pain, but much of itching of the back and limbs, general uneasiness, and a sensation of general bruising. In an hour after M. Castara first saw him, by dint of keeping him constantly roused by talking to him his consciousness was in a great measure restored, although no nausea or vomiting had been produced by two doses of two grains of tartar-emetic given by the mouth, and three grains by the anus. At this time the light annoyed him, and he constantly fell asleep when not kept up by conversation. In an hour more a strong infusion of coffee was given, and lemonade made with tartaric acid. At length, four hours after the poison was taken, he was attacked with nausea, copious vomiting, and profuse diarrhœa, which continued for some time; and in seven hours more he was quite well, except that he felt very weak. He had no tenderness of the abdomen, and no headach, but some heaviness in the head, and considerable disposition to sleep. On the second day his sleep was disturbed by dreaming, and the itchiness of the skin still continued. In two days more he was well enough to go out.

It would appear from the history of this case, that the importance of the stomach-pump, as a remedy for narcotic poisoning has not yet become known to the physicians of Lunéville. The advantageous effects of blood-letting, even while the poison remained in the stomach, are very remarkable; but we should question the propriety of resorting to that remedy before every possible attempt has been made to remove the remainder of the poison from the stomach, because venesection undoubtedly promotes its absorption. From the slight effects produced even after the poison had remained so long as four hours in the stomach, we should be inclined to doubt the patient's account of the quantity taken.

The author of the case adds to his narrative, that his patient had been an opium-eater for four years, and had been accustomed to take three drachms of it in the solid form daily, but that he had given up the practice for a twelvemonth. The circumstance of his having been once an opium-eater could scarcely, we apprehend, explain the apparently slight effects of a large dose of acetate of morphia, because the general fact is, that after discontinuing the practice for some time the individual becomes as sensible to the narcotic operation of the drug as ever. During the time he used the opium he never experienced the delightful effects described by other opium-eaters, but had disturbed sleep, preceded for some hours by great restlessness; and when the narcotic effect passed off he generally had priapism.

STATE MEDICINE.

Report of the Lunatic Asylum of St Petersburg for ten years subsequent to 1819, (*Journal der Praktischen Heilkunde, April* 1831.)—The average number of patients in this asylum is 120. The total number treated during the ten years subsequent to 1819 was 1381, of whom 879 or three-fifths were males, and 502 or two-fifths females.

The ages of the patients were, from ten to fifteen, 3 males and 1 female; from fifteen to twenty, 46 males and 21 females; from twenty to twenty-five, 96 males and 52 females; from twenty-five to thirty, 142 males and 102 females; from thirty to thirty-five, 191 males and 114 females; from forty to fifty, 78 males and 35 females; from fifty to sixty, 54 males and 21 females; from sixty to seventy, 26 males and 9 females; and from seventy to eighty, 17 males and 4 females. Hence under the age of twenty-five the proportion of males is twice that of females; between twenty-five and thirty-five it is as three to two; between thirty-five and sixty it again becomes two to one; and above sixty it is increased to somewhat more than three to one.

The professions of the males were, 69 officers, 158 subalterns or privates, 148 civilians, (*characterizirte civilisten,*) 7 physicians, 5 nobility, 9 priests of the Greek persuasion, 1 clergyman of the Evangelical church, 1 professor, 2 teachers, 4 students, 10 apprentices, 46 artificers, 15 mercantile people, 71 burgers, 86 slaves of the soil, 66 peasants, 43 freedmen, 29 foreigners, 18 prisoners, 2 baptised Jews, 24 of unknown professions. Among the females there were 173 married, 129 unmarried, 28 widows, 28 foreigners, 5 apprentices, 1 actress, 34 country-people, 39 maid-servants, 9 prisoners, and 15 whose occupations were not known.

The causes of their mental derangement are thus proportioned, 105 males and 65 females became deranged from change of fortune; 75 males and 47 females from irregular living and loose conduct; 125 males and 25 females from drunkenness; 34 males and 18 females from neglected education; 15 males and 18 females from ill-usage; 17 males and 26 females from domestic quarrels; 13 males and 28 females from unfortunate attachments; 13 males and 2 females from pride; 4 males and 2 females from avarice; 3 males and 4 females from fright; 6 males and 2 females from religious fanaticism; 12 males and 5 females from nostalgia; 11 males and 7 females from onanism; 17 males and 9 females from hereditary tendency; 31 males and 18 females from epilepsy; 9 males and 7 females from congenital imbecility; 5 males and 2 females from malformation of the head; 8 males and 2 females from injuries of the head and other parts; 48 males and 21 females from diseases of the abdomen, including the sequelæ of childbed; 31 males and 26 females from nervous diseases and hysteria; 1 male from the *coup de soleil;* and 9 males from excessive mental exertion.

Among the several varieties of insanity, there were 244 males and 137 females affected with mania; 128 males and 61 females with Melancholia; 213 males and 147 females with Imbecility, (*insania—alienatio;*) 30 males and 18 females with Monomania; 221 males and 114 females with Fatuity or Idiocy; and 43 males and 25 females with Typho-mania. It is not easy to understand precisely what is meant by some of these terms.

The *Cures* were 403 males, or nearly one-half, and 248 females, or about one-half also. Besides, there were 54 males and 32 females sent home to their friends improved.—The *Relapses* were 24 males and 19 females, who relapsed once; 7 males and 3 females who relapsed twice; 5 males and 2 females who relapsed thrice; and 1 male who had altogether five attacks. Simple relapse, therefore, occurs once in every 15 cures, a double relapse once in every 65 cures, and a treble relapse once in every 92 cures. The deaths were 426, of whom 284 were males and 142 females. The mortality is therefore a trifle less among women.—The causes of death were as follows: Wasting, 58 males and 26 females; marasmus of old age, 38 males and 51 females; scurvy, 33 miles and 11 females; slow fever, 28 males and 15 females; pulmonary consumption, 31 males and 17 females; dropsy, 18 males and 11 females; apoplexy and palsy, 14 males and 9 females; typhoid fever, 13 males and 8 females; inflammation of the brain, 9 males and 5 females; other chronic diseases, 27 males and 13 females; hydrophobia, 6 males and 1 female; suicide, 2 males and 1 female; moribund at admission, 7 males and 4 females.

In the asylum of St Petersburg the patients enjoy full liberty in the adjoining grounds, under constant superintendence. Of 120 persons 30 only are idle and unable to turn their attention to any employment. All take their meals at a common table, and one of them says grace before and after meat. Their employments are as various as possible. Music is allowed them. From 25 to 30, and even sometimes 40, attend divine service, and behave with great decency; and ten or twelve have latterly even taken the Sacrament. Clergymen visit them daily, and, together with the physician, settle who shall be allowed to go to church. The only personal restraint to which they are subjected consists in the occasional use of the glove, arm-strap, linen waistcoat, and confinement in a dark padded apartment. The last is very rarely resorted to, and there are many days when not one of the whole 120 is subjected to any restraint at all. The remedies in common use are tartar emetic, laxatives, foxglove, antiphlogistics, rubefacients, low-diet, warm-bathing, tepid-bathing, the douche-bath, and the foot-bath. In consequence of the confiding friendly way in which they are treated by all persons belonging to the establishment, the constant intercourse kept up with them, and the firmness, without noise or harshness, with which they are opposed when unruly, it happens that very few become manaical. A library is made use of, and books are sometimes read aloud to them. In the night-time a watchman goes round them once every hour, and his fidelity and regularity is insured by a contrivance devised for the purpose.

GRADUATIONS AND COLLEGE OF SURGEONS.

Medical Graduations at Edinburgh.—On the 11th of July 1831, the Senatus Academicus of the University of Edinburgh conferred the degree of Doctor in Medicine on the following Gentlemen, in number one hundred and twenty, after having gone through the appointed examinations, and defended publicly their inaugural dissertations.

Of Scotland.

James Anderson, De Syphilide.
J. Anderson, De Cholera Epidemica.
William Arbuckle, De Aneurismate.
John Hutton Balfour, De Strychnia.
P. Bell, De Venarum Inflammatione.
W. Bruce, De Hydrocephalo Acuto.
F. Burnett, De Rheumatismo Acuto.
George Clerihew, De Scrofula.
W. Dunbar, De Cynanche Tracheali.
Samuel Edgar, De Iritide.
J. C. Ferrier, De Morbo Coxario.
David Grierson, De Erysipelate.
Peter D. Handyside, De Vasis Absorbentibus.
William Henderson, De Empyemate cum Pneumothorace.
Thomas G. Hunter, De Morbis Hæreditariis et de Transmissione Monstrositatum.
James B. Jardine, De Scarlatina.
G. Johnston, De Cynanche Tracheali.
John S. Login, De Cordis Motibus et Sonis.
J. P. Macartney, De Peripneumonia.
H. B. Macfarlane, De Vasis Lacteis.
P. Macfarlane, De Ordine Solaneæ.
Archibald Macrae, De Pneumonia.
John Davie Morries, De Elaterina.
John Murray, De Necrosi.
Thomas Omond, De Chorea.
Thomas H. Patison, De Erysipelate.
James Porter, De Dysenteria.
Robert Pridie, De Calculo Vesicæ.
Peter Robb, De Dysenteria.
Thos. Sanders, De Oculi Functione.
John Scott, De Dysenteria.
William Shaw, De Pneumonia.
James Smith, De Rheumatismo.
John Sutherland, De Transmissione Fluidorum Animalium.
Francis L. Wallace, De Febre Intermittente.
Andrew Weatherhead, De Cholera Spasmodica.
Joseph Williamson, De Rheumatismo Acuto.
Andrew Wood, De Cataracta.

From England.

Ebenezer Acworth, De Somno.
William Alexander, De Dyspepsia.
Robert F. de B. Barry Barry, De Pneumothorace.
Samuel Budd, De Asthmate.
Richard Budd, De Hydrope.
John Cardew, De Scrofula.
Henry Robert Chaplin, De Typho.
F. Churchhill, De Peritonitide.
Thomas Davison, De Asphyxia Submersorum.
Edward Dew, De Febre Puerperali.
William Elliott, De Cordis Humani Physiologia et Pathologia.
Edward Farrar, De Asthmate.
Henry Foley, De Bronchitide.
Arthur Hewgill, De Divisionibus Zoologicis et Botanicis.
Walter Irvine, De Diabete.
Henry James, De Neuralgia.
Lionel P. Kell, De Hydrope.
Benjamin A. Kent, De Gangliis Nervi Sympathetici.
Peter N. Kingston, De Stethoscopio et Percussione.
William Langley, De Structura Morbisque Pulmonum.
Charles R. Laycock, De Absorptione Venosa.
Salter Livesay, De Sceleti Humani Structura Mechanica.
George T. Lovell, De Phænomenis Magnetismo Animali Tributis.
R. B. Malcolm, De Menorrhagia.
John Marsden, De Respiratione.
Thomas O. Mitchell, De Peritonitide.
George Murray, De Hydrophobia.
J. Paget, De Vitiis Congenitis Cordis.
G. Rome, De Chorea Sancti Viti.
Thomas Stone, De Cranio Humano.
John J. Tate, De Secale Cornuto.

W. Terrewest, De Gastro-Enteritide.
Thomas S. Watson, De Bronchocele.
T. Wilson, De Apoplexia a Plethora.

From Wales.

Evan Bowen, De Cœli Mutati in Corpus Humanum Imperio.
Edward T. Hughes, De Erysipelate.

From Ireland.

Thomas Armstrong, De Apoplexia.
John Beamish, De Ictero.
Robert Boyd, De Anatomia Cordis.
Charles R. Brien, De Hepatitide.
Joseph W. Bryson, De Neuralgia.
John Davies, De Bronchitide.
J. Denham, De Rheumatismo Acuto.
J. Dick, De Fluxu Hæmorrhoidali.
R. Dockrey, De Colica Pictonum.
Archibald Erskine, De Dysenteria.
John Farrell, De Angina Pectoris.
W. L. Fitzgerald, De Hydrocele.
William J. Galwey, De Anasarca.
J. L. Gaussen, De Abdominis Sectione
John Geran, De Hernia.
R. N. C. Halahan, De Erysipelate.
Samuel W. Hardy, De Ascite.
John Harvey, De Enteritide.
M. Healy, De Febre Intermittente.
Charles R. Keane, De Strictura Urethræ et Catheterum Usu.
Samuel Knott, De Animi in Morbis gignendis et Sanandis Potestate.
Alexander Knox, De Potestate Naturæ in Morbis Sanandis.
John Leader, De Dysenteria.
M. Macartney, De Abscessibus.
Valentine Macswiney, De Noxis quæ Venam Sectam, Vulneraque in Cadaverum Sectione Accepta Sequuntur.
William Mateer, De Analogia Legum Physicarum et Vitalium.
Bryan Mullaly, De Apoplexia.
John Murray, De Calore Animali.
Maurice O'Connor, De Gonorrhœa.
James Patterson, De Pneumonia.
Michael Quarry, De Hydrophobia.
Patrick Rogan, De Dyspepsia.
Uniacke Ronayne, De Apoplexia.
David H. Scott, De Ophthalmia.
Robert Templeton, De Tetano.
Hugh Trevor, De Dyspepsia.

From Gibraltar.

Thomas Shapter, De Senectute.

From the East Indies.

Jacob D. Hunter, De Asthmate.
Thomas Smith, De Injuriis Capitis.
John Wilkie, De Calore Animali.

From the West Indies.

George Brooks, De Rheumatismo.
James Cadett, De Hepatitide.
W. Clarke, De Membranis Serosis.
William S. Trench, De Tetano.

From America.

R. Allan, De Febre Intermittente.
George P. Peters, De Empyemate.

Surgeons Hall, Edinburgh, 1st August 1831.—*Since Whitsunday last* the following gentlemen have offered themselves as Candidates for the *Diploma of the Royal College of Surgeons of Edinburgh*, and after producing satisfactory evidence that they have completed the course of study prescribed by the College, have been admitted to examination, and found fully qualified to practise the arts of *Anatomy, Surgery, and Pharmacy*, and have received Diplomas accordingly.

Of Scotland.

John Melliss,
John Hutton Balfour,
Andrew M'Lean,
Henry Milne,
Charles Stewart,
John Thomson,
Alexander T. Watson,
John Scott,
James S. Thorburn,
Alexander Taylor,
John Macdonald,
Andrew B. Curror,
Thomas Carstairs,
Christopher Proctor,
Adam Moon,
John Fairweather,
James M. Creighton,
Patrick Nimmo,
James Affleck Murray,
Thomas Alexander,
James Sanderson,
Colin Campbell Gibson,
William Tait,
Patrick Davidson,
Peter M'Laren,
Alexr. Scott.
Colin Buchanan,
Thos. Samuel Hardy,
Alexander Caw,

From England.

Robert Ellis,
Richard Budd,
Robt. F. De Barry Barry,
Charles John Robinson,

From Ireland.

John Beamish,
Valentine M'Swiney,
James Kennedy,
Maurice O'Connor,
Patrick Rogan,
Robert Gethen Copley,
Bryan Mullally,

From Abroad.

Robert Grant Jameson,
Edward Hayle,
James Chalmers,
Archibald John Wilsone,

Extracted from the Records of the Royal College by
(Signed) Wm. Scott, *Secy.*

Edinburgh Hospital for Incurables.

It has been long matter of regret to the benevolent and humane, that many indigent persons afflicted with chronic incurable distempers, not being proper objects of treatment in the hospitals, are either not admitted into these institutions, or, if admitted, are very soon dismissed, when they are either very much neglected, or become heavy burdens on the precarious charity of individuals. That an institution for the reception of such sufferers is requisite, is manifest from the great number of cases to which the medical officers of hospitals for the relief of the sick poor are daily compelled, by the rules of their respective institutions, to refuse admission. On the continent of Europe Hospitals for Incurables are frequent in the cities and large towns, while in this country there is not a single institution of the kind. In England, indeed, the parish workhouses afford accommodation to many invalids of this class, and in this manner supply the place of Incurable Hospitals. But in Scotland there is hitherto no receptacle to which these unhappy persons can have recourse.

With the view of supplying this deficiency, it has been proposed to establish in Edinburgh a national institution, for the accommodation and relief of indigent persons afflicted with incurable diseases. At a Meeting held for this purpose, on the 9th September, in the Council Chamber, the Right Hon. William Allan of Glen, Lord Provost of the City of Edinburgh, in the chair, it was resolved, that an Hospital, for the Accommodation and Relief of Destitute Persons Afflicted with Incurable Bodily Diseases, be instituted; and that the following individuals be appointed office-bearers :—

President.—The Right Hon. Charles Hope, Lord President of the Court of Session.

Vice-Presidents.—The Right Hon. the Lord Provost; the Right Hon. the Lord Justice-Clerk; Gilbert Innes, Esq. of Stow; Sir Henry Jardine, K.R.E.

Directors.—Adam Duff, Esq. Sheriff of Edinburgh; the Very Reverend Principal Baird; the Reverend Dr Chalmers; the Reverend Dr Inglis; William Allan, Esq. of Glen; John Bonar, Esq. of Kimmerghame; George Forbes, Esq.; Dr Abercrombie; Dr Gillespie; William Herries, Esq. of Spottes; Alexander Wood, Esq. advocate; James Hope, Esq. jun. W.S.

Physician, Dr Shortt—*Surgeon*, Dr Craigie.

Treasurers and Secretaries.—George Stodart, W.S., and William Fraser, jun. W.S.

Apothecary.—Mr Gardner, 52, George Street.

Subscriptions will be received by the Royal Bank, Bank of Scotland, Sir William Forbes and Company, the British Linen Company, and Ramsays, Bonars, and Company.

INDEX.

Adams, Esq. Francis, treatment of malignant ulcers of nose and face, 75
Amaurosis treated with strychnia, 223
Alison, Dr William Pulteney, outlines of physiology, . 207
Aneurism, case of spontaneous varicose, ... 104
—— inguinal and popliteal, 399
—— axillary, cured by tying the subclavian artery, . 309
Animation, suspended, improved method of inflating the lungs in cases of, . . . 382
Antimony, on its use in mania and delirium tremens, . 112
Anus, case of imperforate, 363
Arsenic expelled from the stomach by emetics, . . 94
Arteries, acute general inflammation of the, . . 222
Asylum, lunatic, at Petersburgh, report of, . . 462
Atlas, anatomical, . 202
Auscultation, treatise on, . 200
Babington, Dr, on the blood, 441
Bell. See Cholera.
Benoiston on trades disposing to consumption, . . 449
Blacklock, Esq. Archibald, case of poisoning with corrosive sublimate, 92
—— case of periostitis of head, . 106
Blood, considerations on its constitution. . . 441
Bone, experiments on the reproduction of, . . 377
Bones, on inflammation of their medullary tissue, . 457
Brain, tumour of the base, causing loss of sight and smell, . 443
Browne, Dr John, on induration of the omentum, . . 50
—— injury of œsophagus and stomach, . 56
Cæsarean operation, . 214
Cholera, Asiatic, in Russia, . 118
—— observations on, . 395
—— Russian, review of works on, 402
Collis, Maurice, A. B. Taliacotian operation, . . 62
Cooper, Mr, illustrations of his surgical dictionary, . 207
Consumption, on trades predisposing to, . . 449
Corrigan, Dr, Dublin reports, 24
Cow-pox, identity of, with small-pox, . . 446
—— on its recurrence, 447
Cusack, Samuel, Dr, his Report of the Wellesley Female Institution, 162
Davidson, W., his cases, with dissections and remarks, . 35
Edinburgh, Medical Graduations at, 464
—— Surgical Licentiates of, 465
—— Hospital for incurables 466
Elliot, James, his mode of inflating the lungs in cases of suspended animation, . . 382
Empyema, treatment of a case of, 455
Establishment, national vaccine, 230
Ewing, Alexander, Esq. case of inguinal and popliteal aneurism, 399
Examination, two cases of medico-legal, . . 185
Examinations, surgical, at Edinburgh. . . 231
Eye, practical treatise on the diseases of the, . . 197
Ferrall, J. M. Esq. on phlegmonous tumours, . . 1
Fergusson, Mr, case of axillary aneurism, . . 309
—— of imperforate anus, 363
Fletcher, Mr R., his medico-chirurgical notes, . . 419
Gases, on the endosmose and exosmose, . . 211
Gibbs, Dr H. Leake, his observations on cholera, . . . 395
Graduations, medical, at Edinburgh, . . 464
Grant, Dr, his account of Prince of Wales Island, . 197
Gregory, Dr J. Crawfurd, on diseased states of the kidney, 315
—— case of black infiltration of the lungs, 389
—— *R. Reed*, on the report of the Coombe Lying-in-Hospital, 162
—— *Dr W.*, on the preparation of the hydriodate of potash, 368
Hawkins. See Cholera,
Hardy, Esq. Thomas, improved instrument for extracting teeth, 110
Head, periostitis of, . 106
Health and longevity, effects of the arts, trades, and professions, on, 167
Heart, dislocation of the, . 44
Heart, on congenital malformations of the, . . . 263
Heming, Mr George O. on a variety of uterine hemorrhage, not hitherto described, . . 385
Hemorrhagic tendency in a family, 217
Hemorrhagy, uterine, on a variety of, . . . 385
Henderson, Esq. William, on the utility of the secale cornutum, 82
Henderson, Dr P. B., case of amaurosis treated with strychnia, 223
Hospital, report of the Edinburgh Surgical, . . 233
Illustrations, colossal, of human anatomy, . . 202
Institution, report of the Wellesley Female, . . 162
Jörg on the action of medicines, 451
Kerr, Mr William, his case of arsenic expelled from the stomach by emetics, . . 94
Kidney, diseased states of the, illustrated by cases, . . 315

Lactucarium, on the preparation and medical use of, 224
Leamington, dissertation on its waters, 416
Lichtenstadt, *Dr J. R.*, on the Asiatic cholera in Russia, 118
Lithotomy, operation of, by a native doctor of Hindostan, 213
Lithotomy, on failures in, 430
Loudon, *Dr C.*, on the Leamington waters, 416
Lunatic Asylum. See Petersburg, 460
Lungs, black infiltration of the, 389
Lungs and pleura, physical signs of the diseases of the, 200
Lying-in-Hospital, report of the Coombe, 162
Mackenzie, *William*, on the diseases of the eye, 197
Malacca and Prince of Wales Island, medical statistics and topography of, 179
Mania and delirium tremens, treatment of, 112
Medicines, on their action, 451
Morphia, acetate of, poisoning by, 461
Murray, *Dr John*, experiments on the reproduction of bone, 377
Nose, Taliacotian operation of, 62
Nose and face, treatment of malignant ulcers of, 75
Œsophagus and stomach, injury of, 56
Omentum, observations upon indurations of the, 50
Paget, *Dr John*, on the congenital malformations of the heart, 263
Pearson, *Dr R.* on the bark of the root of the pomegranate tree, 224
Perforation, case of, in the stomach, 445
Physiology, Dr Alison's outlines of, 207
Phthisis, on the grinder's, 227
Pneumonia, prevalence of, at different ages, 215
Poisons, on their physiological effects, 460
Poisoning by acetate of morphia, 461
Pomegranate tree, on the bark of the root of the, 224
Potash, hydriodate of; on its preparation, 368
Reports, medical, of diseases of Dublin, 44
—— the Dublin Hospital, 145
—— Edinburgh Surgical Hospital, 233
Reynaud, *M.* on inflammation of the medullary tissue, 457
Secale cornutum, utility of, 82
Seerig, *Prof.*, his anatomical demonstrations, and colossal illustrations 202
Sight and smell lost, case of, 443
Sinclair, *Dr Martin*, case of poisoning with sulphuric acid, 99
Small-pox on its identity with cow-pox, 446
Snake-bite, treatment of, 226
Spence, *Esq. John*, on the treatment of mania and delirium tremens, 112
Spinal chord, apoplexy of, 220
Spinal chord, inflamed, causes tetanus, 444
Spittal, *Mr R.* treatise on auscultation, 200
St Petersburgh report of its lunatic asylum, 462
Stokes, *Dr William*, case of probable dislocation of the heart, 44
Stomach, perforated case, 445
Structure of œsophagus, on its treatment, 424
Students of medicine, notice to, 232
Sublimate, poisoning with corrosive, 92
Sulphuric acid, poisoning with, 99
Surgical diseases, Mr Fletcher on, 419
Syme, *Esq. James*, case of spontaneous varicose aneurism, 104
—— his report of the Edinburgh Surgical Hospital, 233
System, vascular, in the fœtus of vertebrated animals, 209
Teeth, improved instrument for extracting, 110
Tumours, phlegmonous, of iliac region, 1
—— sloughing of, 66
Tetanus from inflamed spinal chord, 444
Thomson, *Dr Allen*, developement of the vascular system in the fœtus of vertebrated animals, 209
Thackrah, *C. Turner*, on the effects of arts, trades, and professions, on health and longevity, 167
Tobacco-clyster, poisoning with a, 227
Tuberculous diseases, liability of the monkey tribes to, 216
Ward Dr T. M. and *T. P. Grant*, *Esq.* on the Medical Statistics and Topography of Malacca and Prince of Wales Island, 179
Watson, *Esq. Alexander*, his two cases of medico-legal examinations, 85
Williams, *Dr*, his treatise on diseases of the lungs, 200
Weber, *Dr M. T.* explanation of the anatomical atlas, 202
York, proposed general scientific meeting at, 231

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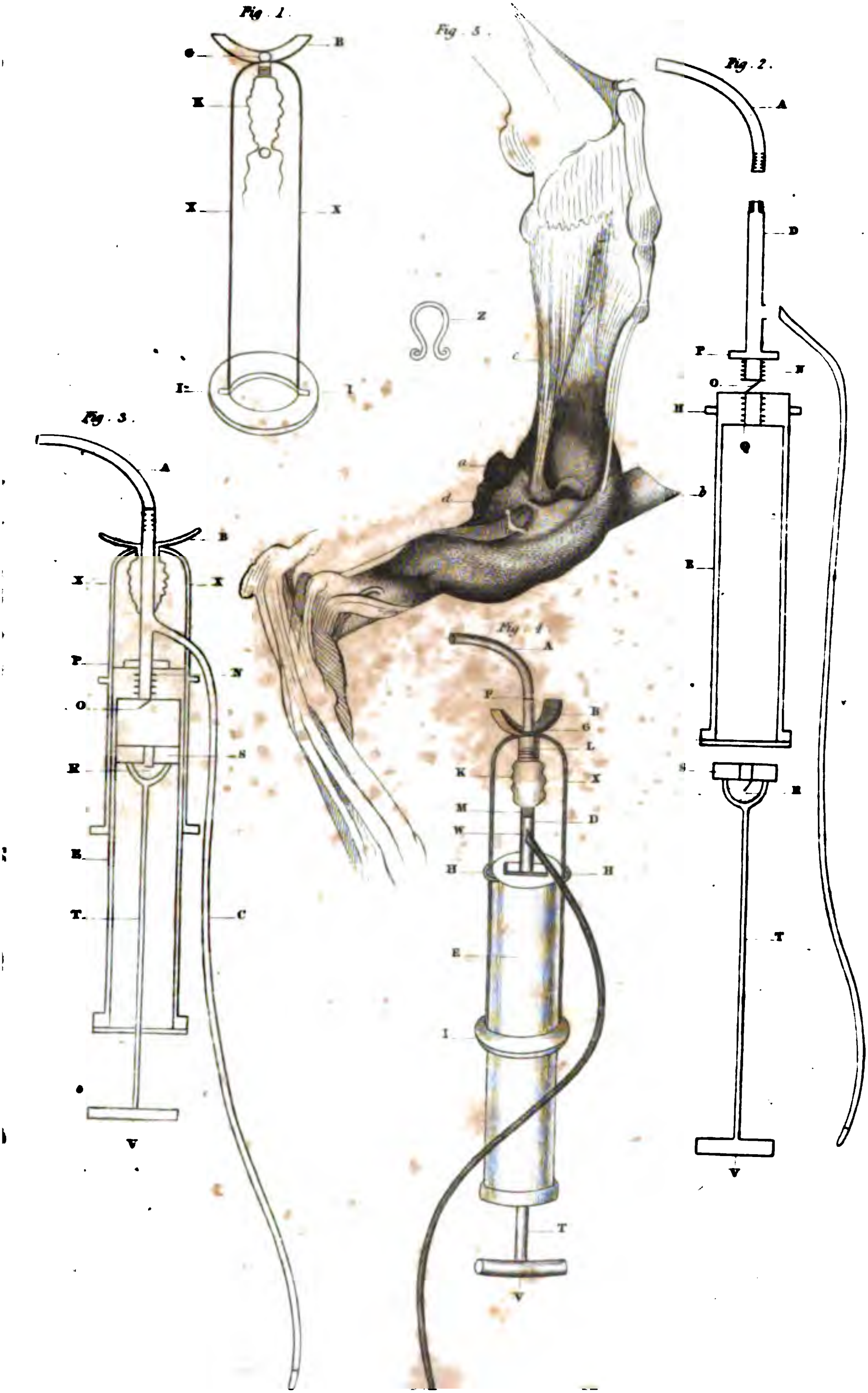
PLATE III.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